An Address

ON

CLINICAL VARIETIES OF BRIGHT'S DISEASE.

Delivered before the Islington Medical Society

BY JOHN ROSE BRADFORD, M.D., D.Sc., F.R.C.P. LOND., F.R.S.,
PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL.

GENTLEMEN,—When accepting the invitation of your secretary to deliver an address before your society it occurred to me that it would be more agreeable to the members if I selected a clinical subject, and therefore I propose to address you on some views as to the clinical varieties of Bright's disease and some of the difficulties that are met with in practice in the differential diagnosis of this disease.

Bright's fundamental discovery was that albuminuria associated with dropsy was sometimes dependent on gross disease of the kidneys and he recognised that the malady presented many forms both clinically and in the post-mortem room, although he himself considered the relationship, if any, existing between the different varieties of kidney lesion an open question. At the present day some pathologists hold the view of what may be called the unity of Bright's disease, looking upon the diverse renal lesions found after death as due to different stages in the course of one and the same malady. Thus, for instance, it has been thought that Bright's disease, after existing for a variable period in an acute stage, might become chronic and that in the latter state it was associated with the lesion known as the "large white kidney"; and that subsequently to this other morbid processes might lead to the shrinking of the organ with an overgrowth of fibrous tissue, leading ultimately to the development of a contracted kidney. According to this view the large white kidney and some forms of contracted kidney would only be stages in the evolution of one and the same malady, much in the same way as it has been held that atrophic cirrhosis of the liver may be preceded by a condition of so-called "hypertrophic cirrhosis."

There are many difficulties, however, in the way of accepting this view, and other observers have considered that the different forms of renal lesion found at the time of death are really independent of one another and not stages in the evolution of one and the same morbid process. Thus, to take the case of the liver again, there are many facts which would fit in with the view that alcohol may in one patient produce so-called "hypertrophic cirrhosis" and in another atrophic cirrhosis, and that the latter is not merely to be looked upon as the sequel of the former. It is possible that that form of Bright's disease which has been so often described as the large white kidney is the complete expression of one morbid process, and that the contracted kidney is an independent affection produced by another morbid process. The relationship existing between the different forms of Bright's disease which are found in the post-mortem-room is one not only of interest to the pathologist, but is of great importance to the clinician, since the prognosis and the complications, and even the treatment, of the different varieties are by no means the same, and it is a matter of great importance to form an accurate diagnosis if possible of the particular renal lesion that is present in any given case.

The different forms of Bright's disease may be classified in a great variety of ways; thus frequently they are classified according to their etiology—Bright's disease following acute diseases, that following exposure to cold, that due to the action of certain poisons such as alcohol and mineral salts, that associated with pregnancy, and so forth. On the other hand the disease may be classified according to the lesions found, and thus many varieties—parenchymatous nephritis, glomerulo-nephritis, and mixed nephritis—have been recognised. Of recent years, however, it has been more and more shown that Bright's disease and nephritis are generally, if not always, due to the action of certain poisons on the renal structures and that these poisons tend to produce their effects more especially on the glomerular tufts and on the renal epithelium. Although some differentiation may be made in that certain poisons, like cantharidin and turpentine, have an especial action on the glomerular epithelium, and others, like mineral poisons such as lead, produce their effects more especially on the epithelial structures, yet no hard-and-fast line can be drawn between the two. This is more especially so from the fact that if the glomerular circulation is profoundly interfered with the nutrition of the epithelial structures of the convoluted tubules must necessarily become impaired, and therefore it is probable that no morbid process will produce an exclusive action on any single element of the kidney. Further, all lesions, both of the glomeruli and of the epithelial structures of the tubules, are accompanied by a variable amount of change in the connective tissue of the organ, and thus it comes about that glomerulo-nephritis, parenchymatous nephritis, and interstitial nephritis are really, strictly speaking, theoretical lesions—unless we mean by "glomerulo-nephritis" merely a condition in which the lesions in the glomeruli are rather more marked than those elsewhere. An etiological classification is of no great value to the clinician and therefore a clinical classification is often of more immediate use. If we classify the varieties of Bright's disease clinically we may recognise three forms—namely, the acute, the chronic, and the latent, understanding by the last the condition in which, notwithstanding the existence of very serious renal disease, symptoms of ill-health are either absent or very trivial until the development of sudden complications which draw attention to the existence of the underlying disease.

In recognising three clinical varieties of Bright's disease nephritis must be separated and also granular kidney. The relations of nephritis and congestion of the kidney to Bright's disease are very close, both as regards the morbid anatomy and also as regards the etiology, inasmuch as in acute congestion the lesions are essentially similar in character to those which are developed during the initial stages of acute Bright's disease. There is not only a close resemblance in the morbid anatomy of acute congestion of the kidney and the first stages of Bright's disease, but there is also a great resemblance in etiology, inasmuch as acute congestion of the kidney may unquestionably be produced by some toxic agents which also give rise to Bright's disease, and this is more especially the case in scarlet fever and other acute specific febrile processes. The albuminuria that is seen during the height of scarlet fever, typhoid fever, and pneumonia, formerly called a "febrile albuminuria," is in all probability dependent on the excretion of toxic bodies by the kidneys, just as Bright's disease is.

Although there is a great resemblance in the etiology, and to a certain extent in the morbid anatomy, between acute nephritis and acute Bright's disease, yet there are considerable clinical differences. The absence of dropsy in acute nephritis and its frequent presence in Bright's disease is one of the most striking of these differences. Further, although the same morbid process in scarlet fever may give rise to acute nephritis and to acute Bright's disease, the former is developed at an early stage of the malady, whereas Bright's disease when produced by scarlet fever generally occurs later or even during convalescence. The mere occurrence of the secretion of a concentrated urine loaded with albumin and perhaps containing blood is by no means sufficient for the diagnosis of acute Bright's disease, since these effects may be produced not only by acute nephritis but also as a result of embolism or infarction of the kidney dependent on heart disease or other causes. Although the main clinical distinction between acute nephritis and acute Bright's disease is the presence of dropsy in the latter and its absence in the former, this is perhaps not an absolute distinction, as anomalous cases of acute and even of fatal so-called "Bright's disease" may occur without the development of dropsy. This shows how difficult it is to draw a hard-and-fast line between acute nephritis and acute Bright's disease, and some authorities look upon the two as synonymous, acute Bright's disease being nothing more than acute nephritis. We may put the matter in another way by saying that we may recognise two clinical varieties of acute Bright's disease—one where the patient not only passes a scanty, highly albuminous, blood-stained urine, but where in addition he suffers from typical renal dropsy, and a second variety where the only effects produced by the malady are urinary, the urine being loaded with blood, albumin, and casts, &c. Provided that we recognise these two definite varieties

it is a matter of no great moment whether we restrict the term of acute Bright's disease to the one and call the other acute congestion of the kidney, or if we call them both acute Bright's disease and look upon the one that is unaccompanied by dropsy as generally more favourable both immediately and remotely than the first. The fact remains that these two forms are seen clinically, but notwithstanding that they may have a similar etiology the ultimate outlook to the patient and the course of the malady are very different in the two cases.

The difficulties in separating acute Bright's disease from mere congestion of the kidney are considerable, but they are nothing compared with the difficulty which is found in recognising the different varieties of chronic Bright's disease and the relationship, if any, existing between chronic Bright's disease and acute Bright's disease. Chronic Bright's disease is a far more common malady, both in hospital and in private practice, than the acute, and every practitioner must be struck with the frequency with which he sees patients suffering from chronic Bright's disease in whom the most careful interrogation fails to reveal any history of acute Bright's disease accompanied by dropsy. At the present day the old view that chronic Bright's disease was generally the sequel of the acute disorder is no longer held with the tenacity that it formerly was and it is generally recognised that a great many cases of chronic Bright's disease, if not the majority, are chronic and insidious from the outset.

Clinically two varieties of chronic Bright's disease may certainly be recognised. One is a condition in which the patient suffers from dropsy and passes a scanty and highly albuminous urine loaded with casts. This variety of the disease is familiar to every practitioner, and such patients usually come under observation either on account of the dropsy or on account of the anæmia and cachexia that are produced by the disease. In many such cases the onset of dropsy is the first symptom that attracts attention, and the suddenness of this onset may be such as to merit the term of "subacute." Probably the great majority of cases of Bright's disease accompanied by dropsy are of this type and certainly in my experience it is unusual to get a history of sudden onset with more violent symptoms, such as pain in the back, blood in the urine, &c. Although in the majority of cases the onset of the disease is gradual, it is, of course, undoubted that in a certain number of cases this condition follows more or less rapidly on acute Bright's disease and in a few it may result as a sequel of acute Bright's disease.

The other variety of chronic Bright's disease which is also exceedingly common is one where the patient presents no signs of dropsy and where, notwithstanding the fact that the urine is highly albuminous, the quantity is not greatly diminished and in some cases is considerably increased. In this second variety of the disease the patient comes under observation either on account of progressive weakness and anæmia and all the symptoms dependent on these or else on account of symptoms dependent on the disturbance of the circulation produced by the high tension and cardio-vascular changes associated with the disease. In many cases of this second variety of chronic Bright's disease the patient may present symptoms of very great impairment of nutrition that has occurred as a result of the renal lesion. Such patients, for example, are often greatly emaciated and may actually seek advice on account of the loss of flesh. In some cases pigmentation of the skin simulating that seen in Addison's disease is present. This second variety of chronic Bright's disease is much more likely to be overlooked—unless a routine examination of the urine is made—than the first, where the presence of dropsy and very often of gastro-intestinal symptoms immediately draws attention to the desirability of examining the urine. But where a patient comes under observation on account of loss of flesh or weakness and perhaps some headache from the arterial changes that have occurred, unless the urine be examined or the fundus oculi be looked at a very serious and grave disease may be overlooked.

These two varieties of chronic Bright's disease not only present different symptoms clinically, but the lesions found after death are also notably different. To the form of the disease where clinically dropsy is a prominent symptom the name of the "large white kidney" is usually applied. To the other form, characterised clinically by the absence of dropsy and the presence of grave nutritional and arterial changes, the term of "contracted kidney" or "contracted white kidney" is perhaps most applicable. This last condition, however, must be carefully distinguished from the true granular kidney which is not entitled to be regarded as a variety of Bright's disease and is really a degenerative lesion associated with widespread arterial changes.

We may, then, recognise three fundamental varieties of Bright's disease, all of which are common—viz., acute Bright's disease, chronic Bright's disease associated with dropsy, and chronic Bright's disease unaccompanied by dropsy but where serious nutritional disturbance is present. The term "large white kidney" was more applicable to the first variety of chronic Bright's disease in former years, when waxy degeneration was a more common phenomenon in the post-mortem room than it is now. Although it is difficult to get rid of the term "large white kidney" as descriptive of this variety of Bright's disease, as a matter of fact the really large white kidney is rarely seen in the post-mortem room at the present day, and one of the specimens originally described by Bright as an instance of this condition was one where amyloid changes were very marked.

In most cases of this form of Bright's disease the kidneys are found either of a normal size or else slightly above it, the cortex is increased in thickness, the capsule is thin and non-adherent, and on stripping leaves a pale, smooth, waxy-looking, and marbled surface, the pyramidal portions of the kidney being deeply congested. In the second variety of chronic Bright's disease the kidneys are always shrunken, often to a considerable extent, the capsule is thickened and slightly adherent, and on stripping leaves a coarsely granular but mottled surface, and the cortex is greatly diminished in amount, often measuring not more than one-eighth or one-sixth of an inch in width. In these cases of contracted white kidney arterial changes in varying amount are usually present. In many cases the heart is greatly hypertrophied and the arteries have undergone similar changes to those seen in advanced cases of granular kidney. In others the arterial and cardiac lesions are less marked, and the degree of cardio-vascular degeneration cannot be correlated accurately with the extent of the renal lesion, since in some cases the kidneys may be greatly shrunken and the arterial changes slight, and in others where the lesion has not advanced to such a great extent in the kidney arterial changes are more marked. The arterial changes in this variety of chronic Bright's disease can not only be often recognised clinically by the character of the pulse, but also by the state of the vessels in the fundus oculi. The importance of examining the optic disc in cases of suspected chronic Bright's disease cannot be over-estimated. In many cases a rigidity and wire-like appearance of the arteries of the fundus can be detected prior to the onset of albuminuric retinitis, although this also is common in such cases.

The most interesting problem presented by the cases of chronic Bright's disease where the kidneys are contracted is the relationship, if any, existing between this malady and the acute and the other form of chronic Bright's disease. As mentioned before, it was formerly thought by some observers that this variety of kidney lesion was only a late stage of chronic Bright's disease or a late sequel of acute Bright's disease. It may be that in a certain proportion of cases this contracted white kidney is the remote sequel to an attack of acute Bright's disease or even of acute nephritis. It may be that in some instances the acute and initial illness has been of so trivial a character as to have been overlooked. But even when these facts are borne in mind it is remarkable how frequently this contracted white kidney is seen in patients who not only give no history of any former attack of Bright's disease but in patients who give no history of any condition where dropsy was present or even of the occurrence of any acute specific disease. I have myself published a series of such cases elsewhere, all occurring in women under 30 years of age and all fatal, so that the diagnosis was confirmed by post-mortem observations, and where all investigations failed to reveal that these patients had suffered from any acute illness prior to the onset of the fatal illness, which in many cases apparently only lasted a few weeks. It would therefore seem probable that this form of Bright's disease might occur primarily without the patient having suffered from either acute Bright's disease or from what was called the "large white kidney." Many cases of this form of Bright's disease that have fallen under my own observation might in many instances be described as latent, inasmuch as they presented no serious symptoms of ill health until the onset of uræmia. In fact, this is the only variety of Bright's disease which is entitled to be described by the term "latent."

Many other differences might be described in the clinical

course of the two forms of chronic Bright's disease which I have sketched above, but the only other one to which I should like to draw attention is the frequency with which uræmic symptoms of a severe type are often associated with what I have described above as the "contracted white kidney." Uræmia in one or other of its forms may be met with in any destructive disease of the kidney, but a very large proportion of cases of acute uræmia, and even of so-called "fulminating uræmia," occur associated with the contracted white kidney. Many observers, including Fagge, have drawn attention to the frequency with which uræmia complicates renal disease in young persons and young adults—and this form of chronic Bright's disease is most frequently seen in the young. This affords another difference, if any more are required, between it and the granular kidney, which, as is well known, is usually seen in persons beyond middle life. Not only does acute uræmia occur with great frequency in cases of contracted white kidney, but in a considerable proportion of cases the patient seeks advice solely on account of the uræmic symptoms. In some cases the first sign of illness is the occurrence of violent uræmic symptoms of a maniacal type, sometimes a succession of epileptiform seizures, and not infrequently attacks of violent dyspnœa, occasionally of an asthmatic type. In a large number of cases the patient seeks advice for what may be called premonitory uræmic symptoms, such, for instance, as severe headache, and in more than one case that has fallen under my observation the patient has sought treatment for what would appear at first sight to be a severe migrainous headache, but where examination of the urine and of the fundus showed the presence of grave renal disease and where, in the course of a few days or weeks, severe and fatal uræmia occurred.

The uræmia that occurs with the contracted white kidney is not only remarkable for the suddenness of its onset and the violence of its symptoms, but in my experience it is also remarkably fatal, and I know of no instance with recovery where acute uræmic symptoms have developed in such a case. Acute uræmia occurring, on the other hand, with acute Bright's disease is by no means necessarily fatal, but where it occurs in association with chronic destructive lesions of the kidney it is a very grave symptom. Giddiness and rashes of a papulous, erythematous, or even of a bullous type are also not uncommon premonitory symptoms in such cases of the onset of uræmia, and although in most instances rashes occur when the uræmic symptoms are well developed in some they have preceded the onset of uræmia, and I know of one case where a young man sought advice on account of the occurrence of a papulous eruption, asserting that he was in good health, but in the course of a few days severe and fatal uræmia developed. In the great majority of cases the diagnosis of this form of Bright's disease is easy from the fact that it occurs in young persons, usually under 30 years of age, that it is unaccompanied by dropsy, that there are obvious signs of cardio-vascular changes such as cardiac hypertrophy, high tension pulse, and changes in the vessels of the fundus oculi; the urine is also abundant, of low specific gravity, containing a quarter or a third of albumin. In very exceptional cases the recognition of this condition may be difficult from the fact that apparently the urine may be free temporarily from albumin, and I have notes of two cases where the urine on examination failed to show the presence of albumin and where the patient came under observation for severe uræmia which was fatal, and where the post-mortem examination showed the presence of advanced and extensive disease of the kidneys.

Although we cannot look upon the contracted white kidney as simply a stage in the evolution of Bright's disease it is probable that it has a similar etiology to that of acute and of the other variety of chronic Bright's disease. Thus in some cases this variety of kidney is seen in persons who have been exposed to the action of lead, and in others a history may be obtained of the occurrence of scarlet fever or other acute disease during early life, but it must be confessed that in the bulk of cases the etiology of this affection is more or less unknown and that in the individual instances that present themselves to us we fail to recognise the cause of the disease. In a few cases more than one member of the same family have been affected. In this respect the disease resembles the true granular kidney, where the observations of Dickinson and others have shown that a family influence can be traced. Alcohol, although it plays a large part in the production of the other form of chronic Bright's disease, would not seem to be a very potent factor in the etiology of the contracted white kidney. I must confess that in the cases which have fallen under my own observation I have been unable in the majority of them to determine the cause, and in a considerable proportion one has been able to exclude alcohol and the occurrence of former acute nephritis. It is a form of Bright's disease which it is especially important to recognise owing to the fact that it does not produce any very marked or obvious symptoms until it is far advanced, and also owing to the fact that it tends to be complicated in such a large number of cases by acute and fatal uræmia.

I would conclude, therefore, by summarising the views that I have put before you shortly as follows. 1. That we may recognise two forms of acute Bright's disease, one characterised not only by the well-known urinary changes but also by the presence of dropsy, the other where dropsy is absent and where the distinction between the acute Bright's disease and mere congestion of the kidney is by no means easy. 2. That there are at least two forms of chronic Bright's disease—one where the patient secretes a scanty, highly albuminous urine and becomes markedly dropsical, the course of the malady being chronic and death occurring usually either from the mere water-logging of the tissues, or from the development of inflammatory complications, or from chronic or subacute uræmia. The second form of Bright's disease where the symptoms often run a latent course for an unknown period and where the patient ultimately seeks advice on account of very vague symptoms of ill-health, such as wasting, loss of strength, circulatory disturbance, or even where he does not seek advice until the onset of acute and fatal uræmia. In this form of the disease dropsy is absent, the urine is abundant and pale, and it contains a considerable quantity of albumin. It would seem that not only may chronic Bright's disease be chronic from the outset, but also that the two varieties of chronic Bright's disease are not necessarily different stages in one and the same morbid process, but represent rather the different effects of perhaps the same morbid process.

A SERIES OF CASES OF ACTINOMYCOSIS.

BY RICKMAN J. GODLEE, M.S. LOND., F.R.C.S. ENG.,

HOLME PROFESSOR OF CLINICAL SURGERY AT UNIVERSITY COLLEGE, LONDON; CONSULTING SURGEON TO THE HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, BROMPTON.

WHY, it may be asked, should a few more cases of this well-known disease be added at the present time to the already over-burdened literature of actinomycosis? The answer is that it is still thought to be uncommon, and for this reason, and because it very closely simulates some other diseases, it is frequently overlooked. I have myself seen 13, as I think, genuine and two doubtful cases during the last 12 years, though before that time I had not recognised a single one. It is practically certain that this is only a question of having one's eyes opened. Within two years I have myself been treating a case for many months without finding out what was the matter, though I am keenly on the look-out for examples of the disease. I do not believe in the occurrence of new diseases. One cannot fail to be struck with the fact that when a new disease is described cases are promptly forthcoming from all quarters. It seems hardly credible that when I was a student Sir William Jenner used to tell us that no case of floating kidney diagnosed during life had, as far as he knew, been found to be such post mortem, and that he used to demonstrate to us a tumour which he thought was a floating kidney but which, when the patient died, turned out to be a uterine fibroid with a long pedicle. And now where is the third year's student who cannot diagnose one?

I well remember the first case of acromegaly that came before me. The disease had never been recognised in this country before, and as a matter of fact the first two cases were described on the same night by the late Dr. Hadden and by myself. Of course, we had all been seeing cases of acromegaly before, just as we had been seeing cases of osteitis deformans before Sir James Paget told us what it was, or myxœdema before we were taught about it by Sir William Gull and Dr. Ord. And so it is, I have no

doubt, with regard to actinomycosis. A few more years and everyone will be able to recognise it. It will take its proper place amongst other diseases, and, what is of more importance, it will be submitted to early treatment and then it is probable that a larger number of cases will be cured than is possible at present. It is a humiliating thought that we are seeing, but not observing, other forms of disease which will seem quite commonplace to our successors if not to ourselves and, what is worse, that we are treating them wrongly because we do not recognise their true nature.

I do not propose to say much about the organism or organisms that produce this disease, as I think that much confusion is apt to be introduced by, so to say, amateur descriptions. It is also pretty clear that the botanists and bacteriologists have not yet quite made up their minds about the exact affinities of the fungus or fungi in question. It is, however, important for the clinician to know one or two facts about it. And first it is well to know that the word "pseudo-actinomycosis," like the word "pseudo-tuberculosis," has crept into medical terminology. It should suggest to our minds that we may meet with cases presenting all the clinical characters of actinomycosis (I say nothing about tuberculosis) but in which what are recognised to be the characteristic appearances of the fungi are not seen. It is intended, however, to imply that identical, or almost identical, clinical appearances may be produced by separate organisms—a much more doubtful proposition. But we had better leave the botanists to settle whether, after all, the different forms do not belong to the same fungus, for we find them hinting at even wider and more unexpected relationships. It has, indeed, been suggested that streptothrix actinomyces and bacillus tuberculosis may be, as it were, the products of the same plant, in connexion with which the occasional clinical association of tuberculosis and actinomycosis must not be lost sight of.

To the clinician the first sight of the fungus is usually obtained in the pus evacuated from an abscess or in the expectoration, and it is visible to the naked eye as small round granules, sometimes very minute, sometimes larger, oftenest of a pale yellow colour but sometimes white, which are easily demonstrated by allowing the pus or expectoration to flow down the side of the test-tube while it is held up to the light or to run over a microscopic slide. They have been compared to particles of iodoform but they are obviously rounded and not of such a bright yellow colour. One should always be on the *qui vive* and get into the habit of looking at the pus from any abscess of doubtful origin from this point of view, but especially if, on opening the abscess, the amount of pus is less than was expected and the finger passes into an indefinite soft mass which bleeds with great freedom. The sensation imparted to the finger is very characteristic when one is accustomed to it. The hæmorrhage suggests what is the fact, that the growth does not interfere with vessels and is in itself very vascular.

If a yellow granule be placed unstained in a little water on a slide and the cover-glass be gently pressed upon it, it will be seen under a low power to be made up of rounded masses which are yellowish on the circumference but less coloured in the centre. Under a high power the centre is seen to consist of a densely felted mass of threads which is called the mycelium, and the circumference to contain the so-called clubs which, from their radiated arrangement, have given the name to the fungus. In some cases, however, these are not to be seen. It must not be supposed that the mycelium is made up of well-defined threads like the mycelium of a mould or a mushroom. It consists of extremely delicate branched threads in which a double outline is scarcely to be distinguished and which sometimes appear to be made up only of chains of cocci which has suggested the latest name for the organism, "streptothrix actinomyces." We are told that the organism is easily grown on various media and that it then consists at first of these threads, which after some time end in chains of streptothrix, which are supposed to constitute the spores of the fungus. At all events these if transferred to another medium bud out into the threads of the so-called mycelium. The clubs are very seldom if ever produced in artificial cultures. In old cultures bulbous ends to the threads are sometimes observed, and it is held that the clubs are only produced when the organism is growing under difficulties.

Although it is practically certain that the organism grows on cereals and grass very little is known of life-history as a vegetable parasite. It is, however, quite certain that it gains access to the bodies of men and beasts on pieces of corn or grass which either stick in the teeth, or mouth, or are swallowed or inhaled—the moral of which ought to be that we should give up the tempting habit of chewing fresh corn, sucking straws, or putting pieces of fresh grass into our mouths. We cannot help inhaling the dust of a threshing machine and are most likely exposed to the inroads of this pestilent organism in a thousand ways which it is impossible to guard against. Once settled in the mucous membrane of the mouth, œsophagus, alimentary tract, or respiratory passages it begins to grow and creates inflammation. Sometimes an ulcer is produced, sometimes a sort of tumour, and it is usually the latter condition that the surgeon is called upon to treat or the pathologist to examine. The tumour is of a pale yellowish colour, globular in shape, riddled with holes of a larger or smaller size containing pus, and very vascular, although it presents a superficial resemblance to the interior of a tuberculous or gummatous deposit. It infiltrates all the tissues with which it comes in contact, spreading in the intermuscular planes and to some extent into the muscles, extending far and wide into the cancellous structure of bones, occupying extensive portions of the solid viscera, and forming communications between the hollow viscera. It sometimes attacks the skin, sometimes it is met with in the lymphatic glands, and occasionally it is distributed to distant parts of the body by the vascular system exactly as in embolic pyæmia; it is then found in the brain or joints, or, indeed, any part of the body. When it occurs in accessible positions it may be completely eradicated by excision or incision and scraping. When it involves regions beyond the reach of surgery the termination is generally fatal. The only drug which appears to exercise any influence upon it is iodide of potassium, which should be given in large doses, 40 grains or more three times a day. It has been asserted that this is a specific which will cure all cases, but this is not the fact, as the experience of others besides myself unfortunately proves. The practice of trusting to this only if removal is possible cannot, therefore, be too strongly deprecated. A combination of surgery and medicine gives the best prospect of a cure.

The diseases with which actinomycosis is most likely to be confused are tubercle and syphilis. It is fortunate for the patient if it be mistaken for the latter, for under these circumstances it is likely that iodide of potassium will be administered and the surgeon may be—as happened in one of my cases—confirmed in his mistaken diagnosis by the successful result of treatment.

With these prefatory remarks I will pass to the cases that have come under my notice which illustrate most of the commoner and some of the rarer manifestations of the disease.

The first four cases affected principally the pleura.

CASE 1.[1]—A boy, aged nine years, was admitted into the Brompton Hospital for Consumption under Sir Richard (then Dr.) Douglas Powell on Oct. 8th, 1889. His father kept a dairy. There was a history of tubercle in the family. His illness began with languidness in June, 1888. This was followed by pain and tenderness in the right side in August, and then a hacking cough without expectoration supervened. On admission he was pale and anæmic with a hectic temperature. The right side of the chest was enlarged and there were two semi-fluctuating swellings, one in the fifth interspace on the nipple line, the other corresponding to the seventh, eighth, and ninth ribs in the posterior axillary line. The head was held to the right owing to a curve of the spine with the concavity to the right. The physical signs were ambiguous, but they suggested the presence of an empyema pointing at two places. The liver dulness was not increased downwards. As a puncture did not withdraw any pus an incision was made on Nov. 1st and carried through an intercostal space. It entered a soft, friable, yellow mass which bled freely, but no pus escaped. A little hæmoptysis followed. An examination of the material which had been withdrawn showed the fungus of actinomyces. The disease advanced rather rapidly, several fresh openings forming and the swelling increasing to a great extent. The boy became intensely emaciated. The superficial veins became clearly visible over his emaciated body. The liver became distinctly enlarged and he died on Feb. 26th, 1889. At the post-mortem examination the disease was found

[1] Transactions of the Royal Medical and Chirurgical Society, 1889, p. 179.

in greatest abundance in the pleura, from the second rib downwards and extending between the base of the lung and the diaphragm. It involved some of the ribs and the corresponding dorsal vertebræ. There were considerable numbers of nodules of the growth in the lower and middle lobes of the right lung which was tough and fibrous. There were some grey nodules resembling tubercle at the apex of this lung. A few nodules of actinomycosis were found in the left lung. There was a mass of the disease between the liver and the diaphragm and a focus as large as a small orange one inch below the upper surface of the organ. It is impossible to say with certainty where the primary disease started in this case, but we thought at the time it was probably in the pleura. At the time of the operation—i.e., before the matter was examined—I thought that I had incised a vascular sarcoma.

I did not see another case of actinomycosis till 1893. The following one occurred in 1896 and it is reported here as it resembles the preceding case more closely than any other of the series.

CASE 2.—A youth, aged 17 years, was admitted under the care of Dr. Percy Kidd to the Brompton Hospital on August 24th, 1896, complaining of a cough and of a painful swelling in the back. He had always lived in town, but had had a holiday in the country in June, 1897. There was no history of sucking straws or of chewing grass. His cough began about Christmas, 1897, and the swelling in the back was noticed three weeks before admission. He had always been thin. On admission he was a pale thin boy with a slight husky cough and but little expectoration. The notes record physical signs at the right apex strongly suggestive of early tuberculous mischief. There was a large fluctuating swelling between the scapula below its spine and the vertebral column, which interfered with the physical examination of this part of the chest. The temperature varied from 99·5° to 102·8° F. The urine had a specific gravity of 1012 and contained no albumin. On August 30th the abscess in the back was opened by Mr. B. Pollard and about three ounces of thick caseous material were withdrawn. The cavity was then thoroughly scraped with a sharp spoon which gave rise to some bleeding; it was then rubbed with iodoform and the wound was completely sewn up. Mr. Pollard tells me that from the appearance of the case, and perhaps also because he was told that the patient was tuberculous, he thought it was a tuberculous abscess, and was perhaps rather surprised that no deep sinus was found leading down to bone. Though the patient improved somewhat after the operation the temperature did not come down and it is recorded in the notes on Sept. 17th that there is no evidence of re-accumulation in the abscess, but the signs at the apex appear to be extending, which suggests that up to that time the case was supposed to be one of tuberculosis. By the beginning of October the abscess had begun again to discharge, and on the 19th the house physician noticed the characteristic yellow granules in the discharge, and, of course, immediately examined the sputum, in which similar bodies were discovered. It now became obvious that there was mischief in the lung beneath the abscess in the back, and at Dr. Kidd's request I undertook a preliminary operation on Nov. 16th with the intention of opening the lung at a later period. I took out about three inches of the third, fourth, and fifth ribs between the scapula and the spine and stitched the lung up to the parietal pleura. It was quite evident that the soft tissues and the bones were extensively implicated with the disease. There was not much hæmorrhage or shock, but the patient, who was at the time very weak and intensely anæmic, never really rallied from the operation and died nine days afterwards, on Nov. 25th. The temperature varied very little throughout the treatment of the case. At the post-mortem examination all the ribs from the first to the ninth, from the angles to the vertebral attachments, and all the corresponding vertebræ were implicated with actinomycosis, and were so soft that they could be cut with a knife. The pleura was much thickened and nearly the whole of the right lung was involved in the disease. I well remember that at the time of the post-mortem examination it was remarked that the appearances closely resembled those produced by tuberculosis; in fact, that, if we had not known what we were dealing with, they might almost have passed muster as being tuberculous. This is doubly interesting in connexion with the fact that when the patient was admitted the physical signs were considered to be so unequivocal that it was not thought necessary to examine the sputa for tubercle bacilli. Nothing else of importance was found except two or three nodules at the apex of the left lower lobe and a few glands at the bifurcation of the trachea which were neither caseous nor suppurating.

The next case is interesting as an illustration of how a case may be watched by numerous observers (including myself) and its true nature be revealed only accidentally at the post-mortem examination. It is also interesting as being the most rapidly fatal case that I have met with.

CASE 3.—A man, aged 38 years, married, was seen with Dr. W. Thyne of Barnet on Nov. 25th, 1899. His previous history revealed nothing of importance. It is not clear when he first began to be ill, but it was in the spring of 1899. In July Dr. F. T. Roberts diagnosed double pleurisy and the patient was sent to Ilkley. An abscess then formed over the head of the right radius, which was opened. In August the right pleura was aspirated and subsequently it was opened and a tube was inserted. No record of the nature of the fluid can be obtained. After the aspiration an abscess developed over the sternum. The patient returned to Barnet on Nov. 6th, having then a tube in the left pleura and two sinuses, the remains of the abscesses mentioned above. He was very weak and breathless, with a hectic temperature of from 99° to 103° F., and, in spite of a fair appetite, rapidly going down hill. He was seen twice by Dr. Hector Mackenzie who advised further exploration of the chest; but beyond affording somewhat better drainage no good result followed. I saw him on Nov. 25th, but did not see that anything surgical could help him, as it was clear that the cavity in the chest was very small and communicated freely with a bronchus. I was struck by a small square patch of absolute dulness to the right of the sternum but above the liver dulness. The patient became rapidly worse and died on Dec. 7th, the final diagnosis, *faute de mieux*, being empyema followed by septicæmia. Dr. Thyne obtained leave for a partial post-mortem examination and he forwarded to me a hard lump which corresponded to the patch of dulness to which I had drawn attention, saying that it looked like a tumour. This was submitted to microscopical examination and by good fortune a beautiful example of the fungus appeared in the section. Had it not been for this, a correct opinion of the case would never have been arrived at. Whether the disease affected the pericardium or not I cannot say; but it is most probable that it did, such affection being apparently not very uncommon.[2]

Another case which I have met with during the present year illustrates in the same way how easily the disease may be overlooked. It is a much more chronic one.

CASE 4.—A girl, aged 18 years, was sent to me by Dr. W. A. Gostling of Worthing on May 18th, 1900. She was fairly well until 1897, though there were points in her previous history strongly suggestive of tuberculosis. In June, 1897, she had slight hæmoptysis and suspicious signs at the left apex. In August, 1897, there was left pleurisy followed by empyema. This was opened by Dr. Frank Hinds, stinking pus being evacuated. The wound healed and she gained flesh. After six months the matter re-accumulated and for the next two and three-quarter years the wound opened and closed periodically, although Dr. Hinds had effected better drainage at a second operation by removing a piece of rib. Indeed, she had worn a tube for about half this prolonged period of time. For six weeks before I saw her there had been some fever, the temperature being from 99° to 101° F., but before that for a long time the temperature had been normal. She lost flesh and became very ill, and a large rounded and very tender tumour appeared in the left side of the abdomen; it was quite dull and was evidently incorporated with the abdominal wall. There were no physical signs at the left apex. I thought that it was probably a tuberculous empyema and that the abdominal swelling was an abscess burrowing down in the abdominal wall from the pleura; but the alternative diagnoses of tuberculous peritonitis or of caries of the spine were discussed. An incision into the tumour at once revealed the true nature of the case. The free hæmorrhage, the small amount of matter burrowing amongst the abdominal muscles and deeper parts, and the indefinite spongy surroundings of the abscess made us immediately examine the pus, and before the completion of the operation a typical specimen of the clubs was shown under the microscope in the theatre.

[2] Cf. Sir Dyce Duckworth: A Case of Acute Actinomycosis, Transactions of the Clinical Society of London, Oct. 12th, 1900.

The patient was put on large doses of iodide of potassium, taking as much as 40 grains three times a day, to which she at once responded. On a subsequent occasion the sinuses were again thoroughly scraped and before many months the wound had healed. She is now apparently well and has grown plump and strong, but there is still some induration beneath the abdominal scar and until this has disappeared I suppose we cannot say that the disease is completely eradicated. For this reason she is continuing to take the iodide of potassium.

The following six cases appear to have originated in the liver.

CASE 5.—A man, aged 45 years, was admitted into University College Hospital on March 5th, 1896, under the care of Dr. G. V. Poore. He had been ill since August, 1895, when he became unaccountably weak and breathless. He lost flesh and perspired at night. The appetite failed and presently a red patch appeared of about the size of the palm of the hand over the lower ribs on the right side. On Sept. 28th he was told that he had an abscess of the liver, and a few days later about four pints of offensive brown pus were evacuated from the abscess. He had coughed up about a pint of a similar material on the night before the operation. Five weeks after the operation he thought he was quite well. In December, however, he began to feel ill again and was taken to see the late Dr. George Harley who is reported to have said that he had diseased bone. He continued to get weaker and to be much troubled with cough up to the time of his admission, when he was obviously very ill. He was emaciated and had an anxious expression. There was a certain amount of bulging of the lower ribs on the right side and there was a sore covered with exuberant granulations in the mid-axillary line over the eighth rib. In the centre of this was a sinus into which a probe passed in various directions for about an inch, but no bare bone was felt. There was slight scoliosis, the concavity being to the right side. The movements of the lower part of the right side of the chest were much impaired and there was slight dulness at the right base, but nothing very marked. There was no apparent enlargement of the liver, which indeed could not be felt below the costal margin. The temperature was of a markedly hectic type, ranging from 99° to 103° F., and with slight variations it remained so until the end of the case. The urine presented no abnormalities. No diagnosis was made at first, though empyema was suggested; but when I was asked to see him (on March 9th) the characteristic yellow granules in the yellow pus escaping from the sinus at once explained the case. He was put upon iodide of potassium, the dose of which was rapidly increased to 25 grains three times a day, but he did not bear it well, and on March 29th it was discontinued. It was again given in smaller doses and was continued at intervals, as the patient could bear it, till the end of the case. Small doses of nitrate of silver were also administered at Dr. Poore's suggestion, and nitrate of silver was applied to the granulations, but no appreciable effect resulted from the treatment. On April 11th I removed all the superficial structures which were affected, and finding that the eighth and ninth ribs were involved I removed considerable portions of them and scraped, as far as I could, the cavity which appeared to be a part of the pleura beneath them. The case went rather rapidly from bad to worse. There were very troublesome diarrhœa, great emaciation, and an exaggeration both of the ascents and descents of the hectic temperature. The wound was scraped on several occasions, and various external applications such as iodine, iodoform, nitrate of silver, sulphur, and formalin were employed, but without effect, and the patient died on June 3rd. At the post-mortem examination a large mass of typical actinomycosis three inches in diameter was found in the right lobe of the liver, the oldest part of which was apparently below and was very closely adherent to the hepatic flexure of the colon which, however, showed no sign of ulceration. Extending upwards from this was a cavity partly between the liver and the lung and partly in the lung itself. The middle and lower lobes of the right lung were surrounded by a very much thickened pleura. Some ordinary pyæmic abscesses were found in the left lung and one in the anterior horn of the lateral ventricle of the brain on the left side.

CASE 6.—A man, aged 22 years, was admitted into the Brompton Hospital under the care of Dr. Kidd on Feb. 21st, 1899. He had been a healthy man up to six months previously when he had had an attack of diarrhœa which lasted three weeks accompanied by pain in the abdomen. He then remained well for three months when he had an attack of pleurisy on the right side. He was very ill for six weeks and from that time he began to cough and expectorate and was troubled with shortness of breath. On admission the patient was evidently very ill, with a hectic temperature varying from 98° to 102° F., with physical signs that appeared to indicate the presence of fluid at the right base, and some œdema of the legs. The urine had a specific gravity of from 1022 to 1025 and contained a thick cloud of albumin and hyaline and granular casts. Neither the liver nor the spleen could be felt, but the latter became obviously palpable in the course of a few days. A fluctuating swelling made its appearance over the left great trochanter, and there were three or four small round nodules in the skin of the forehead and scalp which felt very much like sebaceous cysts. The diagnosis of this case was very doubtful, though it was recognised that there were some serious renal mischief and fluid in the right pleura. On March 20th—a month after admission—the abscess over the great trochanter was aspirated and some iodoform emulsion was inserted. On the 25th I was asked to see him and found a large abscess in front of and around the hip-joint, the movements of which did not appear to be more impaired than the presence of this large collection of pus in its neighbourhood would account for. On incising it a large quantity—a pint or more—of brown pus escaped, in which we at once detected the granules of actinomycosis in great abundance. Even if I had not been on the look-out for them the character of the abscess as determined by the insertion of the finger would have made me almost certain of the diagnosis. The indefinite spongy walls, easily breaking down before the finger in all directions and bleeding very freely, are almost unmistakeable when they have been felt two or three times. The abscess did not appear to communicate with the hip-joint, but passed up towards the abdomen. The day after the operation (March 26th) the patient had two attacks of convulsions followed by loss of power on the left side of the body and accompanied by unconsciousness. On the 28th there was a similar but more severe attack. From this time he gradually took less notice and became less and less conscious. He had some more attacks of convulsions and there was some paresis of the left side. He evidently had some headache and there was some vomiting. The swellings in the scalp increased very much in size. The temperature retained its hectic type till April 4th and then was subnormal till the time of his death on the 10th. At the post-mortem examination a great variety of lesions were found, indicating apparently that the disease had become diffused throughout the body by a process of embolism such as occurs in embolic pyæmia. The largest and most obvious focus of disease was a globular mass as large as a fœtal head in the right lobe of the liver. It was therefore assumed that this was the seat of the primary lesion, but this was of course only a surmise. There was also a smaller nodule in the anterior part of the liver. The large mass extended up to the diaphragm which was intimately adherent to the liver and was invaded by the disease. The posterior quarter of the right lung was adherent to the chest wall and the mischief had extended up into the adhesions, involving as well the corresponding ribs and intercostal spaces (from the eighth to the twelfth) from the spine to the angles of the ribs, but neither the vertebræ nor the ribs were obviously softened. At the extreme base of the right lung there was a limited infiltration of small caseous nodules surrounded by broncho-pneumonia. In the outer part of the cortex of the right kidney there was a nodule of the disease of the size of a pea. A large suppurating gland on the bifurcation of the trachea had ruptured into that tube, and it was no doubt the source of the fœtid expectoration noticed before death. A careful examination was made of the abscess about the hip-joint. It extended widely into the intermuscular planes, but no communication with the joint could be discovered. The joint, however, contained a considerable quantity of semi-gelatinous puriform material, but as this was not collected with sufficient care to ensure that there was no admixture of pus from the surrounding abscess I cannot say whether or not it contained any of the fungus. A somewhat similar gelatinous material was found in the left knee-joints and the left metatarso-phalangeal joint of the big toe. Two circumscribed collections of pus beneath the peritoneum were also found, one immediately above the bladder in the recto-vesical pouch, the other in

the gastro-splenic omentum. Several superficial abscesses were also found. Some of them were the nodules noticed during life in the scalp; one was situated over the metatarso-phalangeal joint of the great toe of the right foot. Several abscesses of considerable size were found in the cerebral hemispheres; one large and two smaller ones were in the left frontal lobe and there was on each side further back a large abscess, that on the right side approaching the surface of the brain in the centre of the ascending parietal convolution. All the collections of pus, with the possible exception of that from the left hip, contained the fungus.

This case is one of the most instructive of the series, not only because it remained so long undiagnosed though under daily and careful observation, nor because even after it was diagnosed the extent of the lesions was not suspected, but chiefly because it illustrates so well the diffusion of the disease to distant parts of the body by means of the blood-stream. It is further interesting to note that although the secondary abscesses were met with in the brain, the skin, and the intermuscular planes the affection of the lung was very limited. The affection of the lung appeared to be by direct extension and there were none of the characteristic abscesses of embolic pyæmia in it.

CASE 7.—A youth, aged 17 years, was admitted into the Brompton Hospital under the care of Dr. Kidd on Nov. 18th, 1898. He is said to have been in good health until the present illness started with cough and pain in the right side about six weeks before his admission. He was stunted, pale, anæmic, and rickety. The left side of the chest was normal, except that the heart's apex was slightly displaced outwards. The right side bulged; it was dull throughout behind, and below the fourth rib in front, the breathing in the dull part being very weak and accompanied by râles. Expectoration was slight and purulent. The liver dulness extended one and a half inches below the margin of the ribs. There was frequent diarrhœa, though he had been constipated before admission. There was no albumin in the urine. The chest was explored without result, and on Dec. 4th the patient expectorated a collar stud. We thought at this time that he must have some bronchiectasis caused by the presence of the foreign body, but that probably there was a malignant growth as well. The temperature, which on admission varied from normal to 101° and 102° F., fell to nearly normal after the expectoration of the stud and remained so for many weeks. The patient walked with a marked stoop to the right because his spine was curved, as is usual, with the concavity towards the affected side. The disease steadily advanced and the boy became much weaker. In February the side became tender and a prominence appeared over the sixth rib on the right axilla, which was incised on Feb. 20th. No bare bone was felt but a track passed through an intercostal space into some internal cavity. There was very free hæmorrhage but very slight hæmoptysis after the operation. On April 18th an exploring trocar was passed through the eighth intercostal space in the mid-axillary line and, as pus flowed pretty freely, an opening was made which admitted the finger, as at the last operation, into a spongy honeycombed part of what I took to be the lung infiltrated with pus, but not in any large quantity. There was free bleeding, but not a trace of hæmoptysis followed the operation. I noted that this was very puzzling, as I could not think that I had penetrated the liver. By this time the liver had become very large and hard, the abdomen was distended and probably contained fluid, and there was a good deal of albumin in the urine. A needle was passed into the prominent part of the liver at the epigastrium but no pus was discovered. The patient rapidly became worse; emaciation was extreme and the superficial sinus became very obvious. The temperature rose and assumed an irregularly hectic type. There were some rigors and there were obvious signs of peritonitis over the liver and of fluid in the abdomen. The wounds showed a tendency to heal superficially, but on one occasion there was an escape of orange-yellow pus from one of them. He died on May 7th. At the post-mortem examination the base of the right lung was found to be everywhere adherent to the diaphragm, as also was the upper surface of the right lobe of the liver. The upper surface of the liver was separated in places from the diaphragm by small abscesses filled with creamy pus, one of which communicated with the opening which I had made in the fifth interspace, and another with the incision in the seventh interspace. No communication could be found between these spaces and the liver, but the liver substance beneath them was occupied by softened caseous, and in some places suppurating, cavities. The whole of the right lobe of the liver except the lower two and a half inches was riddled and honeycombed by caseous areas and suppurating cavites of various sizes, the cavities being obviously formed by the breaking down of the caseous masses, as they were lined by a similar yellow caseous material. A similar change was found in the upper half of the left lobe. The portal and hepatic veins were healthy, as also were the gall-bladder and bile ducts. The only other morbid appearance of importance met with was in the right lung, the lower lobe of which was in a state of condensation due to collapse, the bronchi being dilated. There was, however, no appearance of any change which could be attributed to actinomycosis.

The interest of this case depends upon the following facts. 1. The incisions which were always thought to have penetrated the lung really opened cavities between the diaphragm and the liver. It was, however, noticed on each occasion that little or no hæmoptysis followed and the small amount of discharge and the tendency to heal were remarked at the time. 2. We were at the time keenly on the look out for cases of actinomycosis, and I several times said that it could hardly be anything else, but repeated examinations of the pus failed to detect the fungus. 3. This is explained by the fact that the mycelium was more delicate than usual and that the fungus did not present the typical clubs; but on this point I will say no more as Dr. S. H. Habershon has described the appearances met with in this case.[3] It leads, however, to the remark that the clubs are not always met with even in cases in which they have at one time been easily demonstrated. I do not mean in cases that are recovering; that is, of course, what one would expect. In two at least of my series—Case 5 and Case 12—which terminated fatally and in which there was no lack of discharge it became more and more difficult and was at last impossible to discover any clubs at all, although they were seen in abundance during the earlier part of the disease. I would observe that if post-mortem room or museum specimens are found which to the naked eye look like the disease but in which no fungus is found it will not do to state positively that the case has not been one of actinomycosis.

CASE 8.—A girl, aged 15 years, was admitted into the Brompton Hospital under the care of Dr. J. K. Fowler on June 2nd, 1893. She had been suddenly seized a fortnight before with headache, vomiting, and severe pain in the right side. The pain was worse on drawing a deep breath, and she had slight shivering. On admission she had a cough and there was some slightly blood-stained expectoration. She was not anæmic or emaciated. The tongue was slightly coated. She had a hectic temperature varying between 101° and 104° F. and a very rapid pulse. The urine was normal. There were signs of fluid at the right base, but nothing abnormal was detected in the abdomen. On the 14th I opened the right pleura after excising a portion of the ninth rib in the scapular line and after passing through quite an inch of dense pleura a large cavity was reached which extended forwards for a considerable distance. We made no diagnosis of this case though numerous suggestions were made. The subject of actinomycosis was not so present to our minds as it is now. The patient was in no way relieved by the operation, but she became rapidly emaciated and intensely anæmic. The temperature remained the same till a few days before the fatal termination, which occurred from exhaustion on August 1st—that is, two and a half months after the first onset of the symptoms. At the post-mortem examination it was found that the posterior part of the right lung was firmly adherent to the chest wall from apex to base except at two places, one above (from the second to the fourth ribs) and one at the lower part. The upper of these was a localised abscess containing an ounce or two of thick creamy pus; the lower led by means of a sinus through the diaphragm into a large yellow caseous mass in the right lobe of the liver, measuring four inches vertically by three from side to side and two from before back. It closely approached the upper and anterior surface of the liver which was adherent at these parts to the diaphragm. There was a mass of caseous and calcareous glands at the bifurcation of the trachea. There was no tubercle in the lungs. The middle and lower lobes of the right lung were collapsed and carnified, a result no doubt of the empyema. Nothing else of importance was noticed at the post-mortem examination.

This case created considerable interest at the time. At

[3] Transactions of the Pathological Society of London, Nov. 8th, 1900.

first it was thought that it might be one of typhoid fever, but that idea was abandoned. No suspicion of an affection of the liver occurred, I believe, either to Dr. Fowler or myself. And at the post-mortem examination (at which I was not present) it was suggested that the mass in the liver was probably caseous tubercle. It was only on looking at the specimen afterwards and comparing it with the other cases that had occurred that the idea occurred to the resident medical officer of searching for the fungus. He discovered some spots containing what appeared to be mycelium, but it must in fairness be added that there is no microscopical proof of the conclusion to which the naked-eye appearances would seem to lead.

CASES 9 AND 10.—Two other cases must be briefly mentioned because, though I am personally convinced that they were examples of the disease, I have no actual proof of the fact. They both occurred at University College Hospital and I cannot find the notes of either. In both the liver was the seat of the mischief. One of the patients was a man, aged 26 years, and the other was a girl, aged 14 years.

In the next three cases some part of the intestine was affected.

CASE 11.—A man, aged 29 years, was admitted under my care into University College Hospital on March 16th, 1895, on account of a swelling in the right groin. He said that he had been healthy till 10 weeks before his admission, when he began to suffer from a dull aching pain in the abdomen, which gradually got worse, and after a week he was obliged to take to his bed. He then became very constipated and was obliged to resort to enemata. The constipation then passed off and the pain diminished, but he kept his bed for six weeks, after which he began to get about again. Soon, however, the pain returned and settled in the right hip, so that he again had to take to his bed and was sent by his medical attendant to the hospital. He looked then rather ill, and was slightly wasted. His tongue was furred and he had on the first night a temperature of 103° F. It had fallen to 100·2° by the next morning. His right thigh was flexed to an angle of 75 degrees, and there was evidently a large abscess in the right iliac fossa. It reached to within two inches of the symphisis and extended one inch below Poupart's ligament, but did not reach up into the loin. It was hard and painful but not tender. The urine was normal. I opened the abscess on the 20th by an incision one and a half inches internal to the anterior superior spine. It was apparently extra-peritoneal and contained a considerable quantity of feculent-smelling pus containing actinomyces. A large drainage-tube was inserted. The patient was put upon iodide of potassium and before long he took 40 grains of it three times a day, which he continued to do during the treatment of the case. The wound improved, but it was thought right to open it up and scrape it on three subsequent occasions. On May 25th he left the hospital convalescent and he returned afterwards with the wound completely healed. With few exceptions the temperature remained about normal; on one occasion it reached 101·8° and for a few days before he left the hospital the evening temperature approached 100°.

CASE 12.[4]—The patient was a man, aged about 30 years, whom I was asked to see by Dr. Fairbrother. He had previously been in good health. In 1893 he had at intervals of three months attacks which suggested appendicitis. In February, 1894, there was a still more definite attack of the same nature. In May, 1894, after a similar attack, a swelling appeared which occupied the right lumbar and iliac regions and there was obvious suppuration in the posterior part of it. I opened the abscess at this part and was impressed by the small amount of pus and the very free bleeding. I thought that it was probably a perirenal rather than a perityphlitic abscess, but I did not at that time guess its true nature. On seeing him three weeks afterwards, however, I was struck with the fact that the matter was burrowing in the subcutaneous tissues and inter-muscular planes and took some of it away for microscopical examination and found it teeming with the actinomyces. Afterwards the abscess pointed in front and I again opened it and scraped it, the hæmorrhage at this operation being alarming. The abscesses burrowed in various directions and the patient became intensely anæmic and emaciated in spite of the methodical administration of iodide of potassium and iodide of sodium and the constant irrigation of the sinuses with tincture of iodide. He died on Feb. 25th, 1895, and at the post-mortem examination it was found that the appendix had probably been the original source of the disease. Sinuses passed in many directions, but there was nothing at the time of death in the appearance of them to indicate that they were the result of actinomycosis. This is a most interesting observation because it may explain how cases may not only pass through the whole period of treatment without recognition, but may be examined by competent pathologists on post-mortem examination without any hint being obtained as to the true nature of the affection.

CASE 13.—A boy, aged 16 years, was admitted into the Brompton Hospital under Dr. Fowler on June 22nd, 1898, complaining of pain in the chest and abdomen and a lump in the left iliac region. His illness commenced in August, 1897, with sharp pains in the chest and abdomen which lasted three weeks and were attributed to acute indigestion. He then remained well until Christmas, 1897, when he was suddenly taken with vomiting which lasted off and on for 14 hours. After that the bowels were constipated for a week but were relieved by enemata. He then returned to work until a month before his admission into the hospital, when he was again seized with pains in the abdomen which laid him up for two or three days, since which time the pains had gradually become worse. Nothing abnormal had at any time been noticed with the motions. For a few days before admission he had observed that he could not straighten the left hip. He was a pale, anæmic boy, whose trouble was evidently abdominal, and it was at first supposed that he had some form of obstruction of the bowels. A very obvious lump was to be felt in the left iliac fossa and also per rectum. It extended as far back as the posterior third of the iliac crest and forwards to within one and a half inches of the spine of the pubes, and when I first saw him on June 27th distinct fluctuation in the swelling was to be obtained. In fact, the case was obviously one of abscess, and naturally a psoas abscess was suggested, but there were no signs of caries of the spine. The temperature varied between 100° and 102° F. The urine was normal. On June 27th I made an incision into the abscess and found that it extended up into the loin and down into the pelvis. It was extra-peritoneal but superficial to the iliacus muscle. It had, however, stripped the vessels away from the iliacus so that they came to be in the anterior wall of the abscess. The bleeding was considerable, but not enough to be dangerous. The pus was yellow and contained white particles in which the mycelium of actinomyces was seen without staining and in which the clubs were brought out on staining by Gram's method. He was at once given iodide of potassium, at first in five-grain doses three times day. By August 15th he was taking 15 grains and by the 30th 25 grains three times a day. The operation was followed by a lowering of the temperature to about 99°, at which it remained for 10 days or more. It then gradually resumed an irregularly hectic type, seldom, however, rising above 101°. At first there seemed to be some slight improvement, but the patient remained very anæmic and though at first he put on weight he afterwards became more and more emaciated. On Sept. 18th, the wound was opened up under chloroform by Mr. Pollard and scraped and iodoform was rubbed in, and on the 16th a swelling which had formed on the left side of the lumbar spine was similarly treated. No communication was found between this and the abscess in the groin. On Dec. 1st fæces were discharged through the wound in the groin and on the 12th there was a similar discharge from the wound in the back. This continued until the patient's death on the 21st. He had in the meantime become gradually weaker, but no other symptoms had developed. At the post-mortem examination it was found that the sinuses led to an extensive abscess which surrounded the rectum and led up alongside the sacrum, involving the sacro-iliac articulation of the left side, the coccyx, and the lowest four sacral vertebræ, as well as the disc between the sacrum and the fifth lumbar vertebra. It then tracked up the left side of the spine, involving the tissues in the neighbourhood of it but not the lumbar vertebræ, and extending as high as the ninth left rib. The dorsal vertebræ from the ninth to the twelfth were slightly eroded, and the corresponding ribs were slightly involved in the disease. The perirectal abscess contained fæces. All the viscera contained in the pelvis were matted together by old peritonitis, and the sigmoid flexure was coiled upon itself and drawn up to the right. At its lower part behind it was

[4] Reported in the Brit. Med. Jour., June 27th, 1896.

adherent to the abdominal wall, and here there was a large shallow ulcer exposing the muscular coat which presented no peculiar appearances. It was perforated in the centre, the opening communicating with the abscess. There were three small openings with yellow softened edges by which the abscess communicated with the bladder. The body was extremely emaciated, but beyond marked amyloid disease of the liver and spleen it presented no other abnormal appearances.

In the last two cases the mischief occurred in one in the face and in the other in the neck.

CASE 14.—A woman, aged 27 years, a patient of Dr. D. A. Davies, who was sent to me by Dr. J. Mitchell Bruce, was admitted to the hospital in December, 1894. She came of a highly tuberculous family and had tuberculous disease at the apex of the left lung. A year previously the teeth had been stopped and at that time there was great swelling of the face. She thought that she went to the dentist because of a slight toothache and not because of any ulcer of the gums. The swelling of the face was present before she went to the dentist, but it increased very much afterwards. The stoppings were therefore removed and the nerve was killed, and ultimately, six weeks before I saw her, the left canine, two bicuspids, and the first molar of the upper jaw were removed. The swelling broke on the surface of the cheek and discharged from time to time and when she came to London there were two or three openings in the indurated tissue of the left cheek from which exuded pus in which Dr. Bruce at once detected the characteristic yellow masses of actinomycosis. The patient lived outside Swansea and was very fond of chewing corn and straw. I scraped the cheek with great thoroughness on Dec. 17th. The only place that gave any trouble from hæmorrhage was the outside of the upper jaw above the place whence the teeth had been removed, and this very soon stopped. The wounds were plugged with lint soaked in pure carbolic acid. She was at once put on iodide of potassium, being given five grains three times a day, and the wounds rapidly healed. The ominous note was made when she left that there were tubercle bacilli but no actinomyces in the expectoration. She died from pulmonary tuberculosis and rectal fistula some months afterwards; there was no return of mischief in the cheek.

CASE 15.—A woman, aged 33 years, was brought to me on June 18th, 1898, with a swelling near the angle of the jaw, apparently involving the sterno-mastoid. It was very hard, red on the surface, and it involved the skin. She had first noticed pain in the autumn of 1897, which gradually got worse, and the swelling appeared in February, 1898. She had had all the teeth of the upper jaw removed, but I discovered no evidence that they could have had anything to do with the disease. She had had no sore-throat. She had lived on a farm and was very fond of chewing grass and corn. The swelling did not look exactly like a tuberculous gland, but I thought it probable that it was one. It was opened on June 18th and I was much astonished to find that it had all the appearance of a gumma involving the sterno-mastoid, so I cut and scraped away as much as I could and made a careful microscopical examination of a part of the tissue removed. It showed simply inflammatory tissue and on examining the section now I can find no trace of the fungus. I accordingly put her on a course of iodide of potassium and, as I expected, the wound slowly but soundly healed. After stopping the iodide, however, two small nodules appeared at the lower part of the scar and a minute opening occurred at the extreme lower part, after which these nodules disappeared. Another nodule, however, appeared soon afterwards in the middle of the scar and, now being on the look-out, I carefully examined what came away and at once detected some yellow granules which showed typically the fungus of actinomyces.

This is perhaps the most instructive case of the whole series because the true nature of the disease was not recognised for a long time, but the treatment was appropriate though founded on an incorrect diagnosis.

I may point out that of these 15 cases 10 of the patients were males and five were females. Their ages were respectively nine years, 14 years, 15 years, 17 years, 17 years, 18 years, 22 years, 25 years, 26 years, 27 years, about 30 years, 33 years, 38 years, and 45 years. In four cases the lungs and pleura were principally affected; in six cases the liver and pleura were principally affected; in two cases the cæcum or appendix was principally affected; in one case the rectum was principally affected; in one case the jaw was affected; and in one case the neck was affected. The occupations of the males were as follows: one was the son of a dairyman, two were clerks, one was a florist, one was a butcher, one was an errand boy, one was a gentleman, one was a cellar-boy, one was a bricklayer, and one was a railway porter. Of the females there is nothing to be said about the occupation. Four of the 15 recovered, although one died subsequently from pulmonary consumption, and one has had a relapse but is now well. The others all died although several of them were treated vigorously with iodide of potassium. Three had embolic abscesses in the brain or in other parts of the body.

With regard to treatment I would again emphasise the necessity of carrying out active surgical treatment as well as of administering iodide of potassium. How active this treatment should be must be decided according to the merits of each case. I have not yet met with a case in which such an extensive operation as removal of the cæcum offered any chance of success—except, indeed, in one who recovered after the adoption of milder measures. But the inveteracy of the disease and the fact that this operation has once at all events been successfully performed would, I think, warrant its performance under favourable circumstances. The appearances seen in the lungs and liver of several of the cases that ended fatally do not encourage one to attempt much active surgery when these organs are attacked.

The special points which this paper brings out are the following. 1. The probability that this uncommon disease may be mistaken for others of everyday occurrence. 2. The possibility that for long periods and even after death no signs of the ray fungus may be present in the discharges or discoverable in the tissues. 3. The characteristic appearances of the abscess when opened. 4. The possibility of true embolic pyæmia resulting, the secondary abscesses containing the ray fungus. 5. The fact that if the liver or lungs are affected a lateral curvature of the spine is likely to occur, the concavity being towards the affected side.

I must conclude by expressing my sense of obligation to the physicians who have kindly allowed me to describe the cases which in many instances were previously, and in some instances continuously, under their care in hospitals. In the foregoing descriptions I have frequently made use of the plural "we" when the singular pronoun "I" might have been expected. This refers to occasions when questions of diagnosis were discussed between us, and I trust that I have in no case misrepresented the opinion of any of my colleagues.

I also desire to point out to anyone who may consult this paper for the sake of collating cases that some of them have been previously published, one by myself, and others by other writers. In each case, where I am aware of the fact, such previous publication is indicated in the text.

THE AFTER-RESULTS IN 40 CONSECUTIVE CASES OF VAGINAL HYSTERECTOMY PERFORMED FOR CANCER OF THE UTERUS.[1]

BY ARTHUR H. N. LEWERS, M.D. LOND.,
OBSTETRIC PHYSICIAN TO THE LONDON HOSPITAL.

THE series of 40 cases recorded in this paper includes all the cases in which I have performed vaginal hysterectomy for cancer of the uterus up to the end of April, 1899, when I completed my fortieth case. Up to the year 1893 I had for the most part treated cases of cancer of the cervix that appeared suitable for operation by the supra-vaginal amputation of the cervix, and reserved total extirpation of the uterus for cases of primary cancer of the body of the uterus. Since that time, however, I have been more and more convinced that to perform the supra-vaginal amputation of the cervix in such a way as to give the patient the utmost chance that the disease will not recur is, in the majority of

[1] A paper read before the Royal Medical and Chirurgical Society on Nov. 13th, 1900. The author is much indebted to the Council for permission to publish the paper and some of the illustrations before they have appeared in the Transactions of the Society.

cases, a more difficult matter than to perform the operation of vaginal hysterectomy. I have for some time past only performed the supra-vaginal amputation of the cervix for very early cases of cancer of the vaginal portion in which there is a limited and superficial growth. Up to April, 1899, I have had 33 cases of the supra-vaginal amputation of the cervix for cancer, but I do not propose to deal with these cases in this paper.

THE CASES THAT REMAIN FREE FROM RECURRENCE.

Among the 40 cases of vaginal hysterectomy there are 14 cases in which the disease has not recurred. In two of these, Cases 3 and 4 in the series, although the clinical evidence convinced me that they were really examples of cancer, this cannot be proved by examination of the specimens. In the remaining 12 cases there can be, I think, no doubt whatever on this point. The specimens have been carefully examined and are here for inspection to-night, as also are sections of the growth in each case. This appears to me an important point.

My object in the present paper has been to inquire more especially into the *after-results* in the cases of cancer of the uterus in which I have performed vaginal hysterectomy. In such an inquiry it is essential, first of all, to prove that in those cases in which the disease has not recurred the growth was really malignant. In order to satisfy this condition I have in each case had an independent report on the growth by Mr. Targett of the Clinical Research Association, and his report will be found verbatim in the account of each of the cases. The necessity of a careful microscopical examination of the growth in each case is almost self-evident, and when the microscopical examination confirms the opinion based on the clinical features and physical examination there can, I think, be no hesitation in accepting the result as fully proved. In three cases in this series, Cases 3, 4, and 25, the microscopical examination did not confirm the diagnosis of malignancy based on the physical examination. In Cases 3 and 4, though I have excluded them as "non-proven," I feel little doubt that they were cases of cancer. I have myself met with an example of cancer of the cervix in which the appearance of the growth under the microscope would certainly not have warranted a diagnosis of cancer, but in the case in question, one treated by the supra-vaginal amputation of the cervix, the malignant nature of the growth was proved by recurrence. As regards Case 25 in this series, the clinical features and the physical examination led me to believe without any hesitation that the case was one of malignant ulcer of the cervix, but on examination of the cervix by the microscope Mr. Targett reported that the case was one of tuberculous ulceration. To make quite certain he examined two portions, each taken from a different part of the cervix. I think this case is an important one, as clinically it exactly resembled one of cancer of the cervix. Tuberculous ulceration of the cervix as a primary condition must be extremely rare. Very little is to be found about the subject in works on gynæcology, and it has not been regarded as a condition ever likely to give rise to difficulty when the diagnosis of cancer is being considered. Yet in my case (Case 25) primary tuberculous ulceration of the cervix produced a condition identical, as far as physical examination was concerned, with that resulting from malignant ulceration. I have seen a very large number of cases of cancerous ulcer of the cervix, certainly some hundreds, and I am sure that in the case in question the clinical features of the cervix were precisely similar to those produced by the ulceration of a cancerous growth. The occurrence of such a case emphasises the importance of always examining growths supposed to be cancer under the microscope before accepting them as really malignant. Again, one has occasionally heard of a case pronounced by a competent authority to be one of cancer of the cervix where after a long time the patient gradually improved and ultimately made a good recovery, to the surprise of everyone connected with the case, and no doubt to the discredit of the gynæcologist who had made the diagnosis. It seems to me, in the light of the case above referred to (Case 25), that not improbably the patients in some such cases may have really been suffering from tuberculous ulceration of the cervix, which presumably may occasionally get well spontaneously. However that may be, in Case 25, believing it to be a typical example of cancer of the cervix, I performed vaginal hysterectomy and the patient remains quite well. It is more than four years since the operation but I have, of course, excluded the case from Table II.—the list of cases proved to be cancer of the uterus and treated by vaginal hysterectomy which remain free from recurrence at the present time.

To return to the question of the after-history of patients suffering from cancer of the uterus and treated by vaginal hysterectomy, in addition to proving the malignancy of the growth in each case there is the necessity of ascertaining the state of the patient after the operation. It is not an easy thing to do. To have any real value inquiries have to be made from time to time over long periods; for instance, two cases in this paper have been kept under observation for more than seven years. The evidence of non-recurrence may be obtained either by actual vaginal examination or by seeing the patient at intervals and observing that she continues in good health, or by hearing at intervals from her medical attendant that she continues well, or in some cases by hearing from the patient herself at intervals that she continues well. No doubt the most satisfactory thing is to examine the patient; in eight out of the 12 cases in Table II. I have myself examined the patients from time to time. In some cases, however, when the patient continues well she may not be unwilling to come to see you, but she will object to be examined, as she has nothing the matter. Two cases (Cases 7 and 24, Table I.) are in this category. In some cases one can only hear by letter from the patient or from her medical attendant from time to time. This evidence is not so unsatisfactory as it might appear, and for this reason; in those cases in which recurrence takes place the downward progress to a fatal issue is generally fairly rapid—a matter of months, so that if inquiries made at long intervals—once a year, for instance—result in a favourable report there can be no reasonable doubt that the disease has not recurred.

Numerous cases of vaginal hysterectomy and series of cases of vaginal hysterectomy for cancer have been published from time to time; but I am not aware of any considerable series of such cases in which the proof both of the malignancy of the growth, and especially of the condition of the patients many years after the operation, has been given so rigorously and in such detail as in the present series of cases. As regards the after-histories especially, it will be seen that I have given the date on which I either examined the patient or saw her without examining her, or heard from herself by letter, or heard from her usual medical attendant by letter.

As regards the intervals that have elapsed since the operation without recurrence in the 12 cases referred to.—In Case 7 more than seven years have passed and the patient is known to be well, and in Case 8 seven years have also passed without recurrence. Both of these cases were examples of primary carcinoma of the body of the uterus. In Case 15 six years passed without recurrence; in Case 19 five and a half years; in Case 23 five years; in Case 24 nearly five years; in Case 26 nearly four years; in Case 29 more than three years; in Case 32 two years and 10 months; in Case 33 two and three-quarter years; in Case 36 more than two years; and in Case 39 more than one year. Omitting Case 39 it will be seen, therefore, that there are 11 cases out of the 40 remaining free from recurrence from two to seven years after the operation—that is, 27·5 per cent. This result appears deserving of close attention, since at the present time some gynæcologists have been so much discouraged by their experiences as to doubt if it is worth while to operate on cases of cancer of the uterus at all.

The comparatively high percentage of patients remaining free from recurrence in my series is, I believe, largely due to the careful selection of cases. My practice has been generally to examine the cases carefully under anæsthesia and only to operate when the disease has appeared, so far as physical examination can decide, to be limited to the uterus.

As regards the cases in which recurrence is known to have taken place.—The disease is known to have recurred in 18 cases. In 12 of them recurrence took place during the first year; in two during the second year; in two during the third year; and in two during the fourth year. The 40 cases may be divided into groups as follows. In 12 cases there has been no recurrence; in 18 cases there has been recurrence; four patients died; in two cases the nature of the disease cannot be proved by examination of the specimens; in three cases I have no definite information as to whether the disease recurred or not; and in one case the disease proved to be primary tuberculous ulceration of the cervix and not

TABLE I.—40 CONSECUTIVE CASES OF VAGINAL HYSTERECTOMY PERFORMED FOR CANCER OF THE UTERUS.

Case.	Disease.	Date of operation.	Immediate result.	Remarks.	Years of age.	Remote result.
1	Cancer of body.	March 1st, 1886.	Recovered.	Ligatures only used to secure broad ligaments.	58	Recurrence early in 1887. Died July 7th, 1887, 16 months after operation. Recurrence during the first year.
2	Cancer of cervix.	Oct. 4th, 1886.	Died 48 hours after operation.	Pus set free in the operation (pyometra). Wall of right ventricle very thin and heart fatty. Died from œdema of lungs and heart failure. Ligatures only to broad ligaments.	62	—
3	Cancer of body.	Nov. 7th, 1889.	Recovered.	Large soft "cauliflower" mass protruding through widely dilated os on admission. This was removed immediately and vaginal hysterectomy performed on a subsequent occasion.	42	Seen and examined Oct. 5th, 1893—i.e., nearly four years after operation—when there was no recurrence. Not seen since.
4	Cancer of cervix.	Oct. 23rd, 1890.	Recovered.	Definite "cauliflower" growth on posterior lip of cervix. Hæmaturia soon after the operation, lasting five days. Blood casts present. Pressure forceps used to broad ligaments. Clinical signs and symptoms seemed conclusive as to malignancy, but the microscopical examination not so.	41	This patient has been regularly seen up to and including the present year 1900. There has been no sign of recurrence.
5	Cancer of body.	March 17th, 1892.	Recovered.	Soft papillary growth projecting in cavity of body of uterus.	44	Free from recurrence for more than two and a half years after operation. Case fully recorded in the Transactions of the Obstetrical Society of London, vol. xxxvi., p. 374. Recurrence during the third year.
6	Cancer of cervix.	June 16th, 1892.	Recovered.	Little of the growth to be seen at the os uteri. The whole of the cervical canal up to the internal os was affected by the malignant growth. The cervix, in fact, converted into a thin shell lined with the growth.	59	Good health for two and a half years after operation, then recurrence took place in the scar. Recurrence during the third year.
7	Cancer of body.	Feb. 1st, 1893.	Recovered.	An example of "hard" cancer of the body of the uterus—the rarer variety.	53	Still quite well—more than seven years since the operation.
8	Cancer of body.	June 8th, 1893.	Recovered.	An example of "hard" cancer of the body of the uterus.	57	Still remains quite well. Last examined at the London Hospital July 19th, 1900. No sign of recurrence.
9	Cancer of cervix.	July 20th, 1893.	Recovered.	—	35	Recurrence during the second year.
10	Cancer of cervix.	August 4th, 1893.	Recovered.	—	38	Died. Recurrence during the second year.
11	Cancer of body.	August 21st, 1893.	Recovered.	Soft papillary growth. Perineum had to be incised. After one side of uterus freed it was brought into the vagina by forceps like small midwifery forceps.	54	Came up to the hospital and was examined November, 1893, three months after operation. Quite well and no sign of recurrence. All efforts to trace her since failed as she had left the former address.
12	Cancer of cervix.	August 28th, 1893.	Recovered.	Soft mushroom-like growth affecting both lips. I thought at the time of operation that the left broad ligament and left utero-sacral ligament were somewhat infiltrated and that probably, therefore, removal of the uterus had not removed all the diseased tissue.	42	She was seen and examined on Nov. 30th, 1893, when there was distinct evidence of recurrence in the top of the vagina. I think most probably that the whole of the cancerous tissue had not been removed by the hysterectomy. Recurrence during the first year.
13	Cancer of cervix.	Feb. 1st, 1894.	Died.	Deep laceration of cervix left side. Fatal amount of blood lost at operation.	48	—
14	Cancer of cervix.	Feb. 22nd, 1894.	Recovered.	A case of large "cauliflower" growth.	52	Recurrence took place in August, 1894. Recurrence during the first year.
15	Cancer of cervix.	Feb. 27th, 1894.	Recovered.	An extensive "cauliflower" growth. It was not till the patient was under an anæsthetic that the operation seemed worth trying.	57	This patient remained free from any sign of recurrence till she died in February, 1900. Mr. Howse, Barking-road, E., saw her several times in her last illness. She died from phthisis.
16	Cancer of cervix.	August 13th, 1894.	Recovered.	"Cauliflower" growth of the cervix. Round nodule of the size of a cobnut in left broad ligament. As the uterus could be easily drawn down it seemed worth trying whether removal of the uterus and also of the nodule would be effectual.	43	I believe recurrence took place not very long after the operation, but I had not the opportunity of examining the patient after she left London. Recurrence during the first year.
17	Cancer of cervix.	August 16th, 1894.	Recovered.	An example of the nodular and infiltrating form of the disease, the whole cervix being much thickened by it. Little or no growth projecting from the vaginal portion.	32	Recurrence during the first year.
18	Cancer of cervix.	August 30th, 1894.	Died on seventh day from peritonitis.	A large "cauliflower" growth. Patient doing well till pressure forceps were removed at the end of the second day, when she complained of pain, and within a few hours symptoms of peritonitis appeared. In removing forceps the general cavity of the peritoneum must have been reopened. Since this case I leave on forceps at least three days.	39	—

TABLE I.—40 CONSECUTIVE CASES OF VAGINAL HYSTERECTOMY PERFORMED FOR CANCER OF THE UTERUS—(*Continued*).

Case.	Disease.	Date of operation.	Immediate result.	Remarks.	Years of age.	Remote result.
19	Cancer of cervix.	Oct. 13th, 1894.	Recovered.	Cancer involving the substance of the cervix; little projecting growth. Patient had been told at another hospital that the case was too far advanced for operation.	52	Has been seen at frequent intervals at London Hospital since operation and has remained quite well; last examined March 15th, 1900.
20	Cancer of cervix.	December, 1894.	Recovered.	The removal of the uterus probably did not remove all the tissue infiltrated by the malignant growth.	45	Recurrence during the first year.
21	Cancer of cervix.	Feb. 14th, 1896.	Recovered.	Large "cauliflower" growth.	28	Recurrence during the first year.
22	Cancer of cervix.	April 25th, 1895.	Recovered.	Large "cauliflower" growth especially affecting the posterior lip of cervix. Was doubtful at time of operation if all infiltrated tissue was removed.	35	Seen and examined on several occasions, the last time on June 16th, 1898, when the scar was quite healthy. Heard that she went to America and died either at the end of 1898 or early in 1899; no information as to cause. As there was no sign of recurrence on June 16th, 1898, it seems at least equally likely that she may have died from some independent cause.
23	Cancer of cervix.	June 1st, 1896.	Recovered.	Large "cauliflower" growth, the part of the growth in the cervical canal just reaching internal os. There was a very large pyometra, the pus being horribly offensive.	66	She has remained well since the operation. She has gone to Australia, but writes to me on each anniversary of her operation. The last letter, dated June 11th, 1900—five years after the operation—says she was then quite well.
24	Cancer of body.	August 30th, 1895.	Recovered.	A large papillary growth projected into the cavity of the endometrium.	48	Well May 18th, 1897: also heard from her in May, 1900, that she was quite well.
25	Primary tuberculous ulceration of cervix.	Jan. 30th, 1896.	Recovered.	At time of operation growth was believed to be cancer of cervix.	36	Quite well in November, 1899.
26	Cancer of cervix.	April 16th, 1896.	Recovered.	Large "cauliflower" growths of cervix.	35	Examined Jan. 11th, 1899; a granular mass, size of raisin, at upper part of vagina. Seen recently, mass just the same, and evidently not malignant. Quite well March 15th, 1900.
27	Cancer of cervix.	Sept. 7th, 1896.	Recovered.	Nodule of malignant growth; size cob-nut or thereabouts posterior lip. Anterior lip appeared quite healthy. Supra-vaginal amputation done first, then on slitting up cervix the growth found to extend up to internal os, so body of uterus was then also removed.	45	Well up till three years after operation. Then came to London hospital in February, 1900, with moveable mass size of fœtal head in hypogastric region. Evident recurrence in scar and under vaginal walls. The glands in right groin enlarged. Cachectic; no projection growth in region of scar, and only slight bleeding on examination. Recurrence during the fourth year.
28	Cancer of body.	Nov. 12th, 1896.	Recovered.	Secondary hæmorrhage in third week after operation requiring application of Wells's forceps. Ureteral fistula persisting for some three or four months, then healed spontaneously.	49	Recurrence in the recto-vaginal septum during the first half of 1900. Recurrence during the fourth year.
29	Sarcoma of body.	Feb. 11th, 1897.	Recovered.	See Transactions of the Obstetrical Society of London for full report of case.	24	Quite well March 24th, 1900.
30	Cancer of cervix.	June, 1897.	Recovered.	—	About 60	Recurrence took place about a year after the operation. Recurrence during the first year.
31	Cancer of cervix.	August, 1897.	Recovered.	—	60	Recurrence took place and she died May 19th, 1898. Recurrence during the first year.
32	Cancer of body.	Sept. 4th, 1897.	Recovered.	There were some mucous polypi attached to the lower part of cervix. The malignant growth was in the body.	61	Last examined July 7th, 1900. No sign of recurrence.
33	Cancer of cervix.	Sept. 6th, 1897.	Recovered.	—	38	Well June 21st, 1900.
34	Cancer of cervix.	Sept. 23rd, 1897.	Died three weeks after the operation from pneumonia.	The only case I have had in which cancer of the cervix affected a procident uterus. This patient was mentally feeble and very difficult to manage after the operation. At the post-mortem examination the pneumonia was said to be not septic and the parts in the neighbourhood of Douglas's pouch were looking healthy.	53	—
35	Cancer of cervix.	Oct. 5th, 1897.	Recovered.	A rather advanced case.	52	Died from recurrence July, 1898, the scar remaining unaffected to the last. Recurrence during the first year.
36	Cancer of cervix.	Dec. 2nd, 1897.	Recovered.	—	46	Examined and found quite well March 22nd, 1900, more than two years since the operation.
37	Cancer of cervix.	May 12th, 1898.	Recovered.	A rather advanced case, with large conical ulcer.	38	Recurrence took place March, 1899. She became much worse June 5th, 1899, and died soon after. Recurrence during the first year.

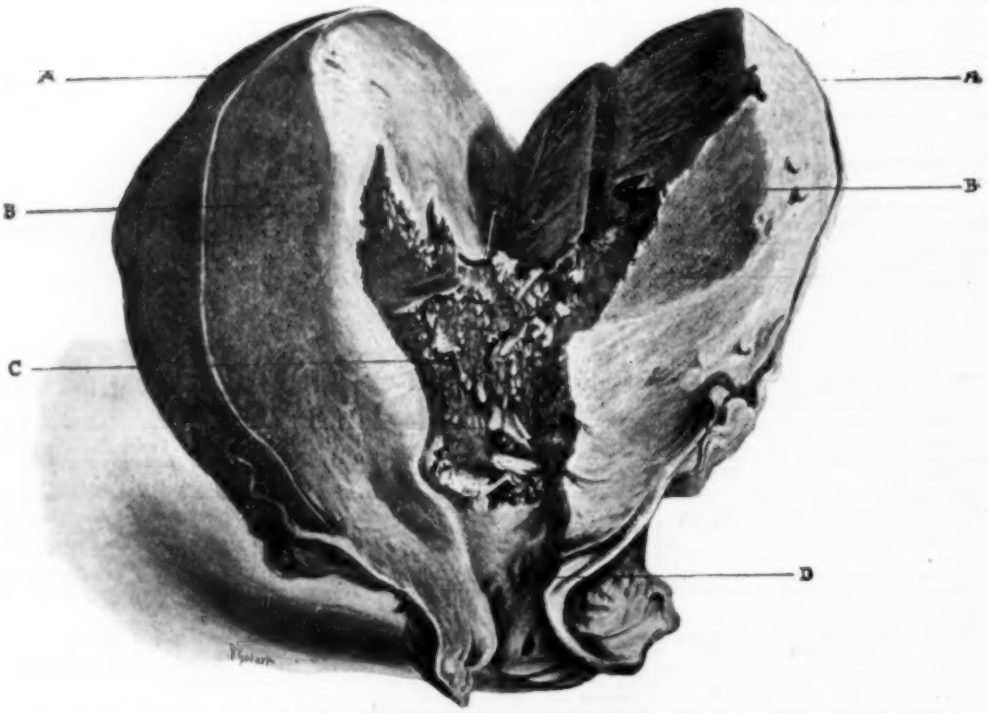
TABLE I.—40 CONSECUTIVE CASES OF VAGINAL HYSTERECTOMY PERFORMED FOR CANCER OF THE UTERUS—(*Continued*).

Case.	Disease.	Date of operation.	Immediate result.	Remarks.	Years of age.	Remote result.
38	Cancer of body.	May 14th, 1896.	Recovered.	—	About 50	—
39	Cancer of cervix.	Feb. 16th, 1899.	Recovered.	Bleeding on taking off forceps, requiring application of one pair more for another two days.	36	Quite well July 26th, 1900.
40	Cancer of cervix.	April 27th, 1899.	Recovered.	The disease affected both the vaginal and supra-vaginal portions of the cervix.	36	Recurrence early in 1900. Recurrence during first year.

TABLE II.—12 CASES OF VAGINAL HYSTERECTOMY FOR CANCER OF THE UTERUS IN WHICH THE DISEASE IS KNOWN NOT TO HAVE RECURRED.

Case.	No. of case in Table I.	Disease.	Date of operation.	Place of operation.	Interval since operation without recurrence.	Microscopical characters of growth.
1	7	Cancer of body.	Feb. 1st, 1893.	Private; with Mr. Stott, of High-gate-road, and Dr. C. Godson.	Seven years and four months. I saw her on June 18th, 1900.	Extract from Clinical Research Association's Report (Mr. Targett): "The growth may be described as a villous carcinoma."
2	8	Cancer of body.	June 8th, 1893.	London Hospital; sent to me by Mr. Best of Dover.	Seven years. Examined July 19th, 1900, at the London Hospital. No recurrence.	Extract from Clinical Research Association's Report (Mr. Targett): "A soft columnar-celled carcinoma."
3	15	Cancer of cervix, large "cauliflower."	Feb. 27th, 1894.	Private; with Mr. Howse, then of Barking-road, E., now of Reading.	Six years.	Extract from Clinical Research Association's Report (Mr. Targett): "The nature of the growth is undoubtedly squamous-celled epithelioma."
4	19	Cancer of cervix.	Oct. 13th, 1894.	London Hospital. Sent to me by Mr Howse of Reading.	Five and a half years (up to March 15th, 1900, when the patient was last examined).	Extract from Clinical Research Association's Report (Mr. Targett): "The substance of the cervix is infiltrated with branching processes of squamous-celled epithelioma."
5	23	Cancer of cervix; large "cauliflower." Pyometra.	June 1st, 1895.	Private; sent to me by Mr. Garry Simpson of Acton.	Five years. Heard from her in letter dated June 11th, 1900, that she was quite well.	Extract from Clinical Research Association's Report (Mr. Targett): "Solid branching columns of squamous-celled epithelioma are shown infiltrating the substance of the cervix uteri."
6	24	Cancer of body.	August 30th, 1895.	London Hospital.	Four and three-quarter years (up to May, 1900, when I heard from her that she was quite well).	Extract from Clinical Research Association's Report (Mr. Targett): "The growth from the body of the uterus is a soft, glandular-celled carcinoma, which has extensively infiltrated the muscular substance."
7	26	Cancer of cervix.	April 16th, 1896.	London Hospital; sent to me by Dr. Dunlop of Purfleet.	Nearly four years. I saw her on March 15th, 1900, and she was quite well.	Extract from Clinical Research Association's Report (Mr. Targett): "This portion of the cervix uteri is thickly infiltrated with a soft squamous-celled epithelioma."
8	29	Sarcoma of body, "deciduoma malignum."	Feb. 11th, 1897.	London Hospital.	More than three years (up to March 24th, 1900, when I last examined her).	For full report of this case see the Transactions of the Obstetrical Society of London, vol. xxxix., for 1897, p. 246.
9	32	Carcinoma of body.	Sept. 4th, 1897.	Private; with Dr. Pope of Kington, Hereford.	Two years and 10 months (up to July 7th, 1900, when I last examined her).	Extract from Clinical Research Association's Report (Mr. Targett): "The tissue from the body of the uterus is extensively infiltrated with a soft columnar-celled carcinoma."
10	33	Cancer of cervix.	Sept. 6th, 1897.	London Hospital.	Two years and nine months (up to June 21st, 1900, when I last examined her).	Extract from Clinical Research Association's Report (Mr. Targett): "The substance of the cervix uteri is extensively invaded with thick branching processes of squamous-celled epithelioma."
11	36	Cancer of cervix.	Dec. 2nd, 1897.	London Hospital.	Two years and nearly four months (up to March 22nd, 1900, when I last saw her).	Extract from Clinical Research Association's Report (Mr. Targett): "The growth in the cervix uteri is a malignant adenoma—that is, a columnar-celled carcinoma in which the cells preserve their tubular arrangement."
12	39	Cancer of cervix.	Feb. 16th, 1899.	London Hospital.	One year and five months (up to July 26th, 1900, when I last examined her).	Extract from Clinical Research Association's Report (Mr. Targett): "The cervix is very extensively invaded with squamous-celled epithelioma. Some of the epithelial processes are large and the central cells have undergone granular degeneration. In others there are small cell-nests."

FIG. 1 (CASE 8, TABLE I).



Vaginal hysterectomy, June 8th, 1893. The patient was seen and examined at the London Hospital on July 19th, 1900, and found to have no sign of recurrence. A, Peritoneum. B, Cut surface of uterine wall. C, Growth in endometrium, "a soft columnar-celled carcinoma." D, Cervical canal.

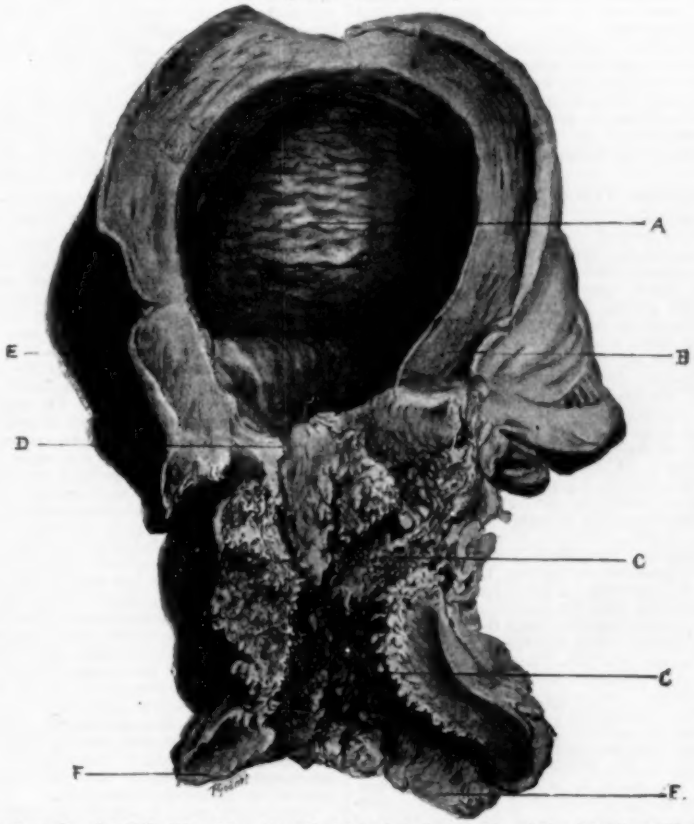
FIG. 2 (CASE 8, TABLE I.).

High power. In this figure the columnar character of the cells is shown, and although the tubules and alveoli everywhere exhibit a central cavity or lumen, yet there are abundant signs of epithelial proliferation, and the cells encroach on the central space. In the well-marked tubular structure of the growth this specimen resembles the so-called malignant adenoma. (Mr. Targett's description.)

FIG. 3 (CASE 8, TABLE I.).

Low power. The figure represents a portion of uterine wall composed of interlacing bundles of muscular tissue and extensively invaded by a soft columnar-celled carcinoma. The cells are arranged in tubules and elongated spaces which have a definite lumen, and the stroma consisting of uterine muscle is very scanty. (Mr. Targett's description.)

FIG. 4 (CASE 23, TABLE I.).



Vaginal hysterectomy, June 1st, 1895. I heard from the patient (who is in Australia) in a letter dated June 11th, 1900, that she is quite well. A, Cavity of the body of the uterus enormously dilated; it contained fœtid pus (pyometra), which escaped during the operation. B, Cut surface of the wall of the body of the uterus. C, Growth in the cervix, "squamous-celled epithelioma." D, Internal os. E, Peritoneal surface of the uterus. F, External os.

FIG. 5 (CASE 23 TABLE I.).

High power. The squamous character of the epithelial cells is here represented, and in the centre keratoid and other degenerative changes have taken place. The cells have separated from the stroma by shrinkage. (Mr. Targett's description.)

FIG. 6 (CASE 23, TABLE I.).

Low power. Solid branching columns of squamous-celled epithelioma are shown infiltrating the substance of the cervix uteri. Large cell-nests are present as well as areas of granular degeneration in the centres of the epithelial processes. (Mr. Targett's description.)

malignant disease. It will be seen that there were no recurrences later than during the fourth year after operation, so that when a patient has passed through four complete years without recurrence there seems to be some probability that she may remain perfectly well.

[Dr. Lewers here referred to the mortality of the operation and discussed some points in the technique. He believed it to be a good plan when operating for cancer of the cervix, after the cervix has been freed, to apply Paquelin's cautery to the cut surfaces adjacent to the growth. He then discussed some complications of vaginal hysterectomy—secondary hæmorrhage and injuries of the bladder and ureters.]

CASES SUITABLE FOR VAGINAL HYSTERECTOMY.

When there is evidence that the disease has spread beyond the anatomical limit of the uterus in any direction it is, I believe, hopeless to expect any permanent benefit from vaginal hysterectomy, even if it is possible to perform the operation. In many cases it is at once evident on examination that the growth has spread far beyond the uterus. No difficulty arises in coming to a conclusion in such cases. In other cases where on an ordinary examination the mobility of the uterus appears to be unimpaired it is not so easy to decide. The uterus may be freely moveable, yet the base of the bladder may be involved. Again, the mobility at an ordinary examination may seem normal, yet when an attempt is made to draw the cervix down to the vulva a check is felt at one side or the other in the region of the broad ligaments or of the utero-sacral ligaments due to the extension of the malignant growth in the corresponding direction. This extension can generally be best appreciated by examining per rectum while the cervix is being drawn down with a volsella. Cases of this kind are certainly unsuitable for radical operation. It may be possible to remove the uterus, but that is of little use if a portion of broad ligament or utero-sacral ligament infiltrated with the malignant growth is left behind. In most of these doubtful cases the best plan is to make a careful examination under anæsthesia before deciding as to operation. For my own part, I have never felt it to be justifiable to perform an operation like vaginal hysterectomy as a palliative operation—in other words, to perform it where one feels certain that the patient has not even a chance of obtaining any permanent benefit. On the other hand, there may be a very extensive growth and yet, if it does not seem to have extended beyond the uterus, operation is advisable. One must not be too ready to reject cases as hopeless. Case 22 in this series is a good example of this. The growth from the cervix was a very large one of the "cauliflower" type and yet the patient certainly remained well for more than three years after the removal of the uterus. I am not even certain that she had recurrence, as, though she is dead, she died in America a comparatively short time after I last examined her and there was then no sign of recurrence. Again, in Case 19 the patient had been told at another hospital that her case was too advanced for operation, yet she remains well more than five years after the operation. In Case 15 also, though the growth is obviously a large one, the patient remained free from recurrence for six years, when she died from phthisis. Case 23 is another instance in point; the growth is a large one, but the patient remains well five years after operation. These cases, then (Cases 15, 22, and 23), go to show that the size of the growth from the cervix is relatively of small importance and that the essential point is whether there is any extension to the tissues outside the uterus itself.

Table I. is a list of the 40 vaginal hysterectomies for cancer which I had performed up to April, 1899, with some of the more important details of the cases. Table II. is a list of the 12 cases in which the disease is known not to have recurred.

CONCLUSIONS FROM THE TABLES.

The conclusions that appear to follow from a consideration of the facts in this paper are: (1) that in a certain proportion of cases patients suffering from cancer of the uterus may be relieved by operation for periods of many years—in some cases for so long a time, seven years and upwards, that there seems some probability that the relief may be permanent; (2) that the proportion of cases in which this result can be expected must remain very small so long as patients generally only seek advice at a late stage of the disease; and (3) that consequently the great desideratum is early diagnosis. Improvement in this direction depends to some extent on a better appreciation on the part of women themselves of the early symptoms of the disease, and especially of the significance of bleeding after the menopause, or of bleeding occurring at an earlier time of life between the menstrual periods. Early diagnosis, of course, also depends partly on the profession. Especially important is the general recognition of the gravity of the symptom just mentioned. It is equally important also to bear in mind that patients suffering from cancer of the uterus may, and generally do for a relatively long period, look quite well. They may be well nourished, or not infrequently even excessively fat; and, as regards the aspect of the face, they may appear to be in perfect health.

NOTES OF THE 12 CASES (TABLE II.) IN WHICH THE DISEASE HAS NOT RECURRED.

CASE 7.—The patient was 53 years of age. She had been married 21 years; she had had no children, but two miscarriages, each at about three months, the last 13 years before I saw her. I was asked to see her in consultation with Dr. Clement Godson and Mr. T. S. Stott of Highgate-road. The symptoms were continued hæmorrhage for seven or eight months, with occasional profuse losses of blood and severe pain in the hypogastric region. On examination the uterus was found to be moderately enlarged and freely moveable. The vaginal portion of the cervix was normal. The sound occasioned very free bleeding. It was agreed that the best course would be to dilate the cervix and to examine the endometrium. This was accordingly done. Two specially prepared laminaria tents were inserted, and on the next afternoon the dilatation of the cervix was completed with Hegar's dilators under anæsthesia. There was a hard, irregular condition of the inside of the body of the uterus. Nothing could be detached either with the finger or with a curette. The diagnosis rested on the symptoms, and on the fact that the condition of the endometrium could not be classified as belonging to any non-malignant state. I advised that vaginal hysterectomy should be performed, and I carried out the operation on Feb. 1st, 1893, assisted by Dr. Godson, Mr. Stott, and Dr. J. H. Sequeira, the last of whom was resident accoucheur at the London Hospital at that time. Mr. F. W. Braine gave the anæsthetic. The patient made a good recovery.

A section from the uterus was made by the Clinical Research Association and reported on by Mr. Targett as follows: "The growth of the uterus is a columnar-celled carcinoma of the body of the villous type. It has deeply invaded the muscular substance."

The patient came to see me on June 8th, 1900, to show me that she was quite well. The interval in this case without recurrence is, therefore, seven years and four months. Her present medical attendant is Dr. Andrew Brown of Lancaster-road, Belsize-park.

CASE 8 (see Figs. 1, 2, and 3).—A married woman, aged 57 years, was admitted under my care into the London Hospital on May 1st, 1893. She was sent up to me by Mr. W. G. Best of Dover.

Previous history.—She was born at Blackburn in Lancashire. During her infancy her family removed to Crayford, in Kent. Her circumstances had always been comfortable. She had scarlet fever in childhood and cholera in 1849.

Menstruation.—The catamenia began when the patient was between 14 and 15 years of age. There was some irregularity for the first 10 months, but after that she was very regular every four weeks, and did not lose very much. She always suffered a great deal of pain after the periods. She was married at the age of 33 years and had six children, but no miscarriages. The last confinement was 14 years ago.

Present illness.—About two years ago the periods began to be irregular. She would "see nothing" for two or three months, and then a period would come on with an excessive loss, containing clots. During the last 18 months she had been losing blood constantly, and for the same time had suffered a good deal of pain, more severe at night, in the lower part of the abdomen. She was closely questioned as to the time when the various symptoms arose, and it became clear that as long ago as two years there was a red discharge between the periods, and that for the greater part of the last two years she had had a good deal of pain in the back and lower part of the hips. She said, also, that she always had suffered a great deal of pain during her periods from the time they began. As she grew older the pain at the periods was not so severe until

about two years ago, when it re-commenced. The pain during these two years had been constantly present, and had increased in severity. Her state on May 1st, 1893, was as follows. She was a stout, heavy woman and as regards the appearance of the face she did not look very ill. There was no cachexia. Her weight on admission was 12 st. 13½ lb. Nothing abnormal could be felt on examination of the abdomen. On vaginal examination there was a considerable descent of the anterior vaginal wall, which protruded from the vulva. There was an extensive rupture of the perineum, reaching back to the edge of the sphincter. There was also slight prolapse of the rectal mucous membrane. Through the speculum the vaginal portion of the cervix appeared to be healthy. The uterus was fairly moveable and in the normal position. The body of it was somewhat enlarged and the sound passed three and a quarter inches, causing rather free bleeding. She was kept under observation in the hospital during the whole of May, and during that time there was a constant red vaginal discharge, and she complained of pain about the lower part of the abdomen, more severe at night. On May 31st, at 5 P.M., two specially prepared laminaria tents were inserted into the uterus with strict antiseptic precautions, and on the following day (June 1st), at 2 P.M., she was anæsthetised with ether. The tents were removed, and it was found that the cervix admitted the index finger easily. The uterus was drawn down to the outlet with a volsella. The finger when passed into the uterus detected a hard, irregular condition of the endometrium; this was particularly marked at the upper part and to the right. I could not classify the condition as resembling any non-malignant pathological state, and I came to the conclusion that the case was one of primary carcinoma of the body of the uterus. I should have mentioned that nothing could be scraped away from the endometrium with a curette.

Operation.—On June 8th, 1893, the patient was anæsthetised with ether and placed in the lithotomy position. The vulva and vagina were thoroughly disinfected with perchloride lotion 1 in 1000. Having drawn down the cervix the anterior fornix was incised first and the bladder was separated from the cervix as high as the internal os. The posterior fornix was then similarly incised, and Douglas's pouch was opened. The cervix was cleared laterally as high as the level of the internal os, pressure forceps being used to control the bleeding where necessary. The utero-vesical pouch of the peritoneum was then opened. The remaining lateral attachments were clamped piece by piece, the left broad ligament being first secured and divided. The uterus was then, as it were, delivered, the left side of it first, so that at this stage it was hanging by the right broad ligament. The latter was then secured with pressure forceps and divided. The uterus was then removed. The vagina was filled with iodoform gauze, the upper part of the plug projecting for an inch or so into Douglas's pouch. The patient's progress after the operation was very satisfactory. The highest temperature in the first week was 100·8° F. on the evening of June 11th. On one occasion in the second week (June 16th) it reached 101·4°. After June 20th the temperature was practically normal, only once after that date reaching 100°. The pressure forceps were removed on the afternoon of June 10th. The patient went home on July 21st, 1893. I have seen her every summer since the operation and have examined her. The last time the patient was examined was on July 19th, 1900, at the London Hospital. So far she has remained free from any sign of recurrence and appears to be in perfect health.

Sections for examination under the microscope were prepared by the Clinical Research Association, and reported on by Mr. Targett as follows: "This growth from the body of the uterus is a columnar-celled carcinoma, in which the tubular arrangement of the cells is well preserved. The tissues have shrunk in hardening, but the sections are sufficiently good for microscopic drawings."

CASE 15.—A married woman, aged 57 years, was seen by me in consultation with Mr. P. W. M. Howse, then of Barking-road, E., but now of Reading, in February, 1894. She had had 13 children, the last 15 years ago, and two miscarriages some time before the last confinement. The complaint when I saw her was that she had been losing blood from the vagina for the last eight weeks. Before this appeared there had been a yellow vaginal discharge for nine months. She had had no pain. She thought that she had lost flesh and said that her appetite was bad. The menopause occurred at 51 years of age. On examination there was found a large "cauliflower"-like growth springing from the vaginal portion of the cervix, forming a ring of soft projecting growth round the os uteri, and bleeding readily on examination.

It was decided to make a thorough examination under anæsthesia, with the understanding that if the conditions were found favourable the uterus should be removed. Accordingly, on Feb. 27th, 1894, the patient was anæsthetised. It was then found that the uterus could be drawn easily down to the vulva and that the growth did not seem to have spread beyond the limits of the cervix. There was a ring of apparently healthy vaginal portion outside the malignant growth all the way round it. This can be well seen even now in the specimen. The uterus was accordingly removed, the steps of the operation being much the same as in the preceding case, except that Paquelin's cautery was very freely applied to the cut edges of the vaginal fornices and neighbouring tissue from which the cervix had been detached. The patient made a very good recovery. I heard of her from time to time from Mr. Howse. She remained free from recurrence. Mr. Howse saw her several times in the course of her last illness (phthisis) and there was no return of the cancer up to the time of her death, which occurred in February, 1900, and was due to phthisis. Mr. Howse had attended her many times in former years for lung trouble. The interval since the operation without recurrence is, therefore, in this case six years.

Sections of the growth for the microscope were prepared by the Clinical Research Association and reported on by Mr. Targett as follows: "The second portion of this growth has been examined, but the tissue is so necrotic that the sections are not worth drawing. The nature of the growth is undoubtedly squamous-celled epithelioma, but owing to decomposition the cells are much vacuolated and the tissue has, therefore, an unnatural spongy appearance. It is not worth the expense of a drawing." I may add that the uterus had been more than five years in spirit before Mr. Targett had a piece of the growth for sections.

CASE 19.—The patient, a married woman, 52 years old, was admitted under my care into the London Hospital on Oct. 9th, 1894. She had had two children, the last one 26 years ago, but had never had any miscarriages. For the last eight years she had been a monthly nurse. She had always enjoyed good health and there was no history of any previous illness. She had always had a comfortable home. She had been a teetotaler all her life and had always lived in or near the East-end of London. Her two children were born within three and a half years of her marriage.

Menstrual history.—The catamenia appeared when she was 13 years old and she was always regular every four weeks except when she was pregnant. She always suffered very much from headache at the menstrual periods. The menopause occurred five years previously—i.e., in 1889. After the menopause she "saw nothing" till the end of June, 1894, when on awaking one morning she found that she had lost a considerable quantity of blood during the night. Throughout the whole of July, 1894, she continued to have a series of losses which occurred irregularly, the discharge being blood-stained and offensive. Occasionally it ceased altogether for two or three days. In August there was much less discharge, but since then it had continued more or less. She had been able to continue at her work. She consulted Mr. Howse in September, 1894, and afterwards was an in-patient at the Samaritan Hospital for four days. She said that she was told there that the disease was too far advanced for any operation to be advisable.

A month before her admission to the London Hospital—i.e., October, 1894—she first noticed a pain in the left iliac and in the hypogastric regions. It was of a burning character, not relieved by lying down, and not worse at night. The pain had gradually become more severe. A week before her admission she began to feel a pricking and shooting sensation in the left breast. She said that she had not been getting thinner.

On admission she was fairly well nourished but rather sallow. On Oct. 11th (1894) she was examined under anæsthesia. On vaginal examination there was no obvious projecting growth, the only suggestive point on gentle examination being that the external os was unusually patulous. On pressing the finger firmly into the os a soft friable growth could be felt occupying the cervical canal. The uterus was drawn down to the vulva with a volsella and came down easily. The vaginal fornices seemed to be free from any infiltration. On examining bimanually no

extension of the disease into the broad or utero-sacral ligaments could be made out.

Operation.—On Oct. 13th, 1894, the patient was anæsthetised with ether and placed in the lithotomy position. Vaginal hysterectomy was then performed. Wells's forceps were used for securing the vessels. The vagina was packed with iodoform gauze and the upper part of the gauze plug was pushed into the pouch of Douglas. The gauze and forceps were removed 96 hours after the operation, but no vaginal douches were given till the 24th, when she was ordered vaginal douches of weak iodine water twice daily. The temperature after the operation did not rise above 100·4° F. and the patient made an uninterrupted recovery.

Examination of the uterus after removal.—The body of the uterus was not appreciably enlarged, and, so far as could be judged by the naked eye, the disease had not extended into it. An interesting point, however, was that at one part of the fundus there was a white nodule of circular shape of the size of a pea in the thickness of the uterine wall. Microscopical examination of this nodule subsequently showed that it was a small fibro-myoma.

Sections of the cervix were prepared by the Clinical Research Association and were reported on by Mr. Targett as follows: "The substance of the cervix uteri is infiltrated with branching processes of squamous-celled epithelioma. There are a few cell-nests and some of the larger processes show granular degeneration of the central cells. The section is suitable for drawing."

I saw this patient last on March 15th, 1900, at the London Hospital, and examined her. The scar was quite healthy and she was herself perfectly well. The interval since the operation in this case is, therefore, five and a half years.

CASE 23 (see Figs. 4, 5, and 6).—The patient, who was 55 years of age, was brought to see me by Mr. Garry Simpson of East Acton on May 17th, 1895. She had had six children, the last 17 years previously, and two miscarriages, both before the date of the last confinement. The menopause occurred at the age of 50 years. Since then she had "seen nothing" till August, 1894. Since that time there had been a constant red discharge from the vagina and for the last two or three weeks the discharge had been offensive. She felt ill and worn out at the time when the vaginal discharge commenced. For some time she had suffered from continuous pain in the lower abdomen; the date of its commencement could not be fixed. Of late she had been getting rapidly thinner. On examination of the abdomen nothing abnormal could be felt. On vaginal examination a large "cauliflower" growth was felt springing from the vaginal portion of the cervix. The uterus seemed freely moveable and the body of the uterus seemed considerably larger than normal in a woman past the menopause. She went into Fitzroy House for the purpose of having the uterus removed and during the time—a few days—she was there before the operation the temperature at night was 100° F. or thereabouts as a rule.

Operation (June 1st, 1895).—Vaginal hysterectomy was performed in a manner similar to that already described in the preceding cases. At one stage of the operation the whole field became suddenly inundated with horribly fœtid pus. This came from the body of the uterus and had been let out by a laceration about the junction of the cervix and body caused by traction with the volsella. The pus had previously been pent up in the body of the uterus by occlusion of the os internum, constituting the condition known as "pyometra." In spite of the fact that the whole region of the wound was fouled with this fœtid pus the convalescence was quite uninterrupted.

A portion of the cervix was sent to the Clinical Research Association for microscopical examination and Mr. Targett reported on it as follows: "The growth from the cervix uteri is a squamous-celled epithelioma of the papillary type. There is a considerable amount of keratoid change in the epithelial processes."

A drawing of the uterus and two drawings of the section accompany this paper.

This patient writes to me every year on the anniversary of her operation. As she is now living in Australia I do not actually get the letter for some weeks afterwards. I have had a letter from her this year (1900) dated June 11th, and in it she says that she still continues quite well. The uterus shows well the enormous distension of the cavity of the body by the pus referred to above and it also shows an extensive cauliflower-like growth from the cervix extending up the cervical canal to the internal os.

CASE 24.—A married woman, aged 48 years, was admitted under my care into the London Hospital on August 21st, 1895, at the request of Dr. W. H. G. Aspland.

Previous history.—She had been married 21 years but had been a widow for 15 years. She had never been pregnant. The catamenia appeared when she was about 15 years old. She had dysmenorrhœa when she was single but suffered much less from this after her marriage. The menopause occurred about three years previously.

Present illness.—She had not been well for some time. For the last seven or eight months she had had a yellow vaginal discharge mixed with blood more often than not. She had no pain when the discharge began, but for the last two months she had pain in the left iliac region occasionally. It gradually became more severe and was also felt at times across the lower abdomen and in the lower part of the back. It was clear, however, that a blood-stained discharge and a feeling of not being in good health were for some months the only symptoms. She said on admission that she felt weaker than formerly but did not think that she had lost flesh. Her appetite latterly had not been good.

On admission nothing abnormal was detected on examination of the abdomen. On vaginal examination some blood-stained discharge was seen about the vaginal orifice and in the vagina. It was not offensive. The uterus was found to be strongly retroverted; the vaginal portion of the cervix was rather soft but otherwise normal. The uterus was easily replaced with the sound, which passed three and a quarter inches. On bimanual examination the uterus was found to be freely moveable and the body of it uniformly enlarged. On August 23rd two small laminaria tents were put into the cervix, and on the next day the dilatation of the cervix was completed under anæsthesia with Hegar's dilators up to No. 19. On passing the finger into the uterus a growth of about the size of a walnut was found projecting from the posterior wall. It had a papillary surface and was very friable, portions being easily broken off with the finger.

Operation.—Vaginal hysterectomy was performed on August 30th, 1895, the steps of the operation being similar to those adopted in the preceding cases. The pressure forceps and gauze were removed on the fourth day, and the patient made an uninterrupted recovery, leaving the hospital on Sept. 23rd.

A portion of the growth was sent to the Clinical Research Association for microscopical examination and Mr. Targett reported on it as follows: "The growth from the body of the uterus is a soft glandular-celled carcinoma which has extensively infiltrated the muscular substance. The growth is of the columnar-celled type, though the tubular arrangement of the cells is not recognisable in the section."

I had a letter from this patient in May, 1900, to say that she was still quite well. The interval since the operation is, therefore, nearly five years.

CASE 26.—A married woman, aged 35 years, was admitted into the London Hospital under my care on April 6th, 1896. She was sent to me by Dr. J. Dunlop of Purfleet. She had been married 16 years and had had eight children; the last was eight months old. She had had one miscarriage five years previously. Menstruation had always been natural.

History of the present illness.—She had found herself getting thinner lately and had had a bad appetite. About three months previously she consulted a medical man on account of a yellow vaginal discharge which she had had for some months. During the last two months the discharge had increased in quantity and had been sometimes blood-stained. She had sometimes felt a pain in the lower abdomen and back, but pain did not seem to have been a marked feature in her present illness. On April 10th she was examined under anæsthesia. On vaginal examination a "cauliflower like" growth was seen springing from the vaginal portion of the cervix. The cervix could be easily drawn down to the outlet of the vulva with a volsella, and there was a good margin of apparently healthy tissue round the growth. The body of the uterus was not enlarged. The case seemed a suitable one for radical operation.

Operation (April 16th, 1896).—The patient was anæsthetised with the A.C.E. mixture. Vaginal hysterectomy was then performed, the method adopted being similar to that described in the preceding cases. The cut margin of the vaginal wall round the cervix was thoroughly seared with Paquelin's cautery. The patient made an uneventful recovery and went home on May 23rd, 1896.

A portion of the growth was sent to the Clinical Research Association for microscopical examination and Mr. Targett

reported on it as follows: "This portion of the cervix uteri is thickly infiltrated with a soft squamous-celled epithelioma. There are no typical cell-nests but a considerable number of cell-inclusions." I have seen this patient several times since the operation; the last time I examined her was on Oct. 12th, 1899, when there was no evidence of recurrence. I have also seen her on March 15th, 1900, when she said that she was quite well, but I did not examine her on that occasion. The interval since the operation in this case is, therefore, nearly four years.

CASE 29.—This was the case of primary sarcoma of the body of the uterus which formed the subject of a communication read before the Obstetrical Society of London, and which was published in Vol. xxxix., p. 246, of the Transactions of the Society. I only refer to it here for the purpose of recording the patient's subsequent progress. I have seen her this year (March 24th, 1900), more than three years since the date of her operation, and she remains free from any sign of recurrence.

CASE 32.—The patient, aged 61 years, was sent to me by Dr. H. B. Pope of Kington, Herefordshire. She had been married many years and had had two children, the last 28 years previously. I saw her on August 19th, 1897. She gave a history that nine years previously she had a fall and that there had been more or less discharge, occasionally blood-stained, from the vagina since. For the last two months there had been a constant discharge of blood every day. About a week before I saw her she had had a flooding and was said to have lost about a pint of blood. The menopause was said not to have occurred. She had not been getting thinner. On August 20th she was examined under anæsthesia. There were several mucous polypi hanging from the cervix. The uterus was considerably enlarged and was freely moveable. As I did not think the mucous polypi could have accounted for the flooding mentioned above I dilated the cervix and found a growth in the endometrium, a portion of which was detached for examination and sent to the Clinical Research Association. Mr. Targett reported on it as follows: "The tissue from the body of the uterus is extensively infiltrated with a soft columnar-celled carcinoma. The tubular arrangement of the cells is generally well preserved, but in certain parts of the section the growth has undergone caseation." The patient was accordingly advised to have the uterus removed.

Operation (Sept. 4th, 1897).—Vaginal hysterectomy was performed as in the preceding cases; the patient made a good recovery. I examined her last on July 7th, 1900. She was quite well and there was no sign of recurrence. The interval since the operation is, therefore, two years and 10 months.

CASE 33.—A married woman, aged 38 years, was admitted under my care into the London Hospital on Sept. 4th, 1897. She had been married 19 years and had had six children, the last three years previously, and two miscarriages, the last nine years previously. The catamenia appeared when she was 16 years old. The periods lasted four days and were preceded by severe pain for three days, which was relieved on the appearance of the flow. She was never regular every four weeks till the last four years, but since the last confinement she had been fairly regular till recently.

Present illness.—This began nine weeks previously, when bleeding occurred and continued for nearly five weeks. After an interval of three or four days she had a flooding and the loss of blood continued for eight days. She had had no pain but had been getting thinner the last six weeks, and her appetite during that time had been poor.

On examination (Sept. 5th, 1897) there was seen some blood about the external genitals. There was slight prolapse of both vaginal walls. There was marked enlargement of the anterior lip of the cervix, which was three or four times as thick from before backwards as the posterior lip. The growth on the anterior lip was raised and in shape like a horseshoe with the convexity forwards. The growth bled easily on examination and the sound pressed against it readily penetrated its substance. The body of the uterus was of normal size and the uterus was freely moveable.

Operation (Sept. 6th, 1897).—Vaginal hysterectomy was performed as in the preceding cases. She made a good recovery and left the hospital on Oct. 1st, 1897. Sections of the growth were prepared by the Clinical Research Association and reported on by Mr. Targett as follows: "The substance of the cervix uteri is extensively invaded with thick branching processes of squamous-celled epithelioma."

I last examined this patient on June 21st, 1900, at the London Hospital. She was then quite well and there was no sign of recurrence. The interval since the operation without recurrence is, therefore, two years and nine months.

CASE 36.—A married woman, aged 46 years, was admitted into the London Hospital under my care on Nov. 27th, 1897. She was sent to me by Mr. A. O. Honnywill of Sutton, Surrey. She had been married 27 years and had had four children, the last 19 years previously. She had a flooding in the last week of August, 1897; the loss of blood continued for three weeks; there was then an interval of three weeks without any loss. The bleeding then began again, and since then she had been losing blood almost constantly. She thought that she had been getting stouter.

On examination it was found that the anterior lip was the seat of a growth about equal to half-a-crown in area. The growth was raised and had an overhanging margin. The whole anterior lip from before backwards measured one inch and three eighths, the posterior lip similarly only three-eighths of an inch. The sound pressed against the growth readily penetrated its substance. Two small hard nodules were felt under the mucous membrane, one to the right of and the other above the growth. The uterus was freely moveable and there was no evidence of extension of the disease to the broad ligaments or utero-sacral ligaments.

Operation (Dec. 2nd, 1897).—Vaginal hysterectomy was performed, the method adopted being the same as in the preceding cases. Paquelin's cautery was used to sear the cut edges of the vaginal walls. There was slight pyrexia for the first fortnight after the operation, the highest point reached being 101° F. on the evenings of Dec. 6th and 7th. After the 7th the temperature was normal. The patient did well and went home on the 29th.

A portion of the cervix was sent to the Clinical Research Association for examination and Mr. Targett reported on it as follows: "The growth in the cervix uteri is a malignant adenoma, that is, a columnar-celled carcinoma in which the cells preserve their tubular arrangement. The tissues are deeply invaded and there is much small-celled growth around the proliferating tubules." I last examined the patient on March 22nd, 1900, at the London Hospital. There was no sign of recurrence and she expressed herself as feeling quite well. The interval since the operation is therefore two years and nearly four months.

CASE 39.—The patient, a married woman, aged 36 years, was admitted under my care into the London Hospital on Feb. 4th, 1899. She had had eight children, the last 11 months prior to her admission. She had also had two miscarriages. Her chief symptom had been a red vaginal discharge which had been present for 15 months. At times the bleeding had been severe. She had also had pain in the left iliac region for 10 months. She was suckling at the time of her admission. On Feb. 9th, 1899, the following note was made: "On the vaginal portion of the cervix is a raised and slightly irregular crescentic growth. It involves chiefly the left side of the vaginal portion immediately adjacent to the external os and about two-thirds of the posterior lip. It has an overhanging margin. About the middle of the anterior lip a little nodule, the size of a shot, is felt under the mucous membrane, the surface of which over the nodule is healthy. There is another similar nodule to the left of the first. There are also two nodules to the right under the mucous membrane of a similar character. The sound pressed against the crescentic growth enters its substance to the depth of an inch. The uterus is freely moveable, retroverted, and its body not enlarged. There is no evidence that the growth has extended beyond the limits of the cervix."

Operation.—On Feb. 16th, 1899, vaginal hysterectomy was performed in the same way as in the preceding cases, Paquelin's cautery being used to sear the cut edges of the vaginal wall. The forceps were removed on the 20th. Slight bleeding occurred, so that the region of the wound was exposed with Sims's speculum. A pair of Wells's small pressure forceps was used to secure the bleeding point. This pair was left on for two days and then removed. No further bleeding occurred. The temperature only rose above 99·5°F. on two occasions; one was on the evening of the 20th and the other was on the evening of the 22nd, when the temperature was 100·2° and 100° respectively. The patient went home on March 15th.

A portion of the growth was sent to the Clinical Research Association for microscopical examination and Mr. Targett reported on it as follows: "The cervix is very extensively

invaded with squamous-celled epithelioma. Some of the epithelial processes are large, and the central cells have undergone granular degeneration. In others there are small cell-nests."

I examined this patient on July 26th, 1900, and found no sign of recurrence. The interval since the operation in this case is therefore one year and five months.

Harley-street, W.

A CASE OF DEFORMITY OF THE SKULL SIMULATING LEONTIASIS OSSEA, ASSOCIATED WITH A CONDITION OF SYRINGOMYELIA; NO PHYSICAL SIGNS OF SYRINGOMYELIA PRESENT.

BY JAMES S. COLLIER, M.D., M.R.C.P. LOND.,
PATHOLOGIST TO THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, QUEEN-SQUARE, W.C.

THE following case is of peculiar interest as it exemplifies (1) the presence of syringomyelia in the absence of all the usual signs of that condition, and (2) a close simulation both in signs and symptoms of leontiasis ossea by a thin, deformed skull and meningeal ossification. I am indebted to Sir William Gowers and to Mr. Victor Horsley for permission to publish the notes, and to Dr. F. E. Batten for the pathological report.

A man, aged 36 years, was admitted into the National Hospital for the Paralysed and Epileptic, under the care of Sir William Gowers and Mr. Horsley, on March 7th, 1899, complaining of paralysis of the right arm, of fits commencing in the right arm, and of gradually increasing deafness. He was the youngest of a family of 13 and there was no history of hereditary disease. When four years of age he fell from a window, a distance of 20 feet, upon his head. He was unconscious for some days and was ill for two years after the accident, and from the time of its occurrence his head was noticed slowly to become deformed. The deformity of the head, which I shall subsequently describe, was plainly visible in a photograph of the patient at the age of five years. In childhood he broke each femur on separate occasions, and since the right femur was broken he had always walked with a limp. He learned the trade of a carpenter and earned a good wage for many years. At the age of 26 years he began to suffer with occasional fits, commencing in the right hand and these occurred at long intervals till the time of his admission into the hospital. Ten years before admission progressive deafness came on, and six years before admission his right shoulder became stiff and later the elbow and wrist became similarly affected and the muscles of the right arm wasted. After three years the right arm had become so useless as to necessitate his giving up work. At this time he was a patient at Guy's Hospital under the care of Dr. Hale White, who published a full account of his case.[1] Two years before admission he had entirely lost the use of the right upper limb and the left upper limb became slightly weak. When admitted into the hospital the patient was seen to be a man of very small stature, his height being 56½ inches. He was very intelligent and had no speech defect. He occasionally had fits, commencing in the right hand, in which consciousness was lost late, the convulsion becoming general, with biting of the tongue and enuresis. He was extremely deaf to both aerial and perosteal conduction, but otherwise the special senses and cranial nerves were normal. The pupils were equal and reacted normally. There were slight nystagmus and slight weakness of conjugate deviation of the eyes on looking to the left. There was no optic neuritis, headache, or vomiting.

Cranium.—The head was much flattened vertically and it was very broad, there being a roll-like projection which commenced in the upper and posterior part of the temporal fossa on each side and ran backwards, overhanging the ears and becoming more and more prominent until it involved the whole occipital region. This projected backwards and downwards, forming a sharp angle with the neck, which did not disappear when the head was fully flexed on the neck. It was as if the posterior two-thirds of the vertex of the skull had been telescoped on to the base by pressure from above, leaving this remarkable calvarial fold along the line of bending. With the face vertical the posterior part of the skull projected backwards 7·5 centimetres from the posterior mid-line of the neck. The upper part of each pinna was pushed down almost to the horizontal, and the lumen of each external auditory meatus was much reduced in size. The deformity of the skull was symmetrical. There was neither deformity nor asymmetry of the face (Figs. 1 and 2).

The patient's height was 4 feet 8¼ inches. The body was well formed and symmetrical, there were no lateral curvature of the spine and no pes cavus. There was slight weakness of the right lower face. The right upper extremity was very rigid, the elbow being pressed into the side and flexed at a right angle, and the fingers were rigidly flexed into the palm. The rigidity was chiefly muscular, but there were adhesions with grating on passive movement in the shoulder and elbow joints. There was marked wasting of all the muscles with no change in electrical reaction. There was complete paralysis of the fingers and wrist, but the patient could flex and extend the elbow and could move the shoulder feebly and slowly. The left upper extremity presented no abnormality. Power in the lower extremities was good, the muscles were well developed, and there was no ataxy. The man walked with a slight limp and had done so ever since the fracture of the right femur in childhood. He complained of no pain. Sensibility to touch, to pin-pricks, and to heat and cold was carefully tested over the right upper limb, and the rest of the body was roughly tested with touches and pin-pricks, but no abnormality was found. There were no sphincter trouble and no vaso-motor or trophic disturbance. The knee-jerks were brisk, the right arm jerks were exaggerated, and the left were present. There was no foot clonus. The plantar reflexes were extensor responses.

On April 10th Mr. Horsley opened the skull over the right arm centre. The bone was found to be very thin and tough and there were apparently several separate bony masses in connexion with the inner surface of the dura mater, which showed white through it. Enough of the calvarium was taken away to allow of the removal of the bony masses at a subsequent operation. The wound was then closed without the dura mater having been opened. The patient was under the anæsthetic (chloroform) for 35 minutes. He recovered well from the anæsthetic, but three hours later his respiration suddenly became embarrassed and he became cyanosed. Stimulants and artificial respiration were at once resorted to and the wound was opened, but no hæmorrhage had occurred. He rapidly became unconscious and he died about ten minutes after the respiratory failure had set in.

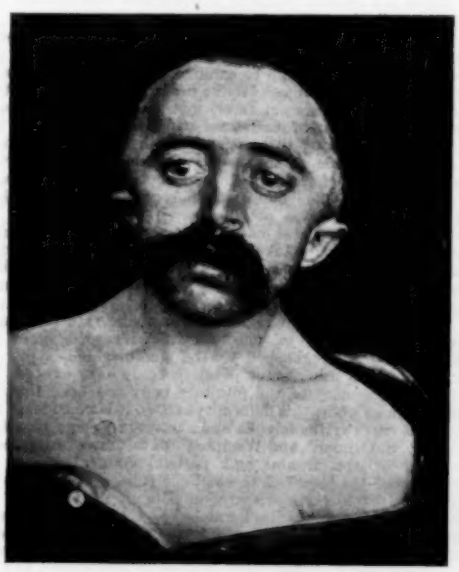
Post-mortem examination.—Permission to examine the thorax and abdomen was not obtained. The right shoulder-joint and inter-phalangeal joints of the right index finger were examined and no adhesions or other abnormalities were found. The spine was normal. On removing the spinal cord and dividing it below the medulla a large central cavity was seen lined by a smooth membrane. On opening the skull the dura mater, which was not adherent to the convolutions, was found to be much thickened, especially at its junction with the tentorium, and was of a dark colour. Over the whole of the left parietal region it was hard and contained several eggshell-like bony plates, the largest of which measured 8 centimetres by 6 centimetres, and was situated over the central convolutions. The brain, of a similar peculiar shape to the skull, was soft, and after hardening in formalin it showed no other abnormality than slight dilatations of the lateral ventricles, especially at the anterior horns.

Microscopical examination.—The cavity in the medulla and spinal cord was first noticeable in transverse sections, immediately below the inferior olive on the left side. Traced downwards it became rapidly larger, and in the upper cervical region it measured 10 millimetres in the transverse and 2 millimetres in the antero-posterior direction. It attained its maximum size at the fifth cervical segment, below which level it became smaller and occupied the posterior horn on the left side and disappeared at the level of the eighth cervical segment to reappear at the fourth dorsal segment in the left posterior horn. It disappeared at the sixth dorsal segment. From the medulla to the sixth dorsal segment the cord was much flattened, but below this level it was of normal appearance. The large cavity in the cervical region

[1] Brit. Med. Jour., 1896, vol. i., p. 1377.

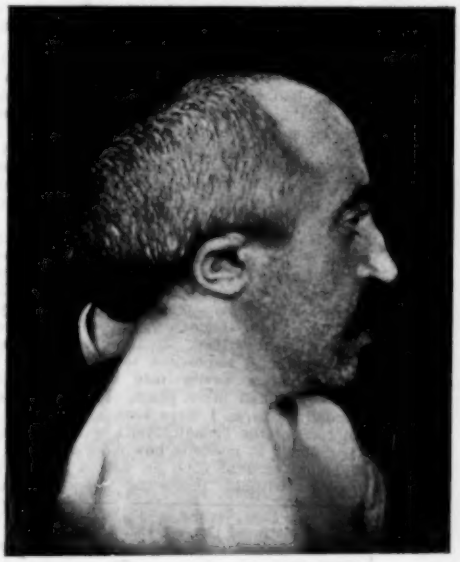
was lined by columnar epithelium; the smaller cavity in the left posterior horn had no such lining, but was surrounded by a simple structureless membrane. The cortex of the left central convolutions was normal. A few recently degenerate fibres were found in either pyramid, and more numerous recently degenerate fibres were seen in the antero-lateral tracts of the cord. There was marked old degeneration in the right pyramid, which could be traced down as far as the lumbar region. No abnormality was found in the nerve cells by Nissl's method.

FIG. 1.



Front view of head, showing the prominence above the ears, which are displaced.

FIG. 2.



Side view of head, showing deformity posteriorly.

Description of the macerated skull.—The whole skull was very shallow, its maximum height when resting on the table being 12 centimetres. It was very broad, the breadth increasing abruptly at the coronal suture, and being greatest in the region of the parietal eminences (Figs. 3 and 5).

FIG. 3.

Macerated skull seen from below, showing the flattening of the base and the abnormal breadth.

The maximum breadth was 17 centimetres and the maximum length was 20 centimetres. The posterior extremity of the skull was the lambda which projected sharply as a broad blunt beak (Fig. 4). The base was extremely large and flat and it included the whole of both squamosal bones and almost the whole of the occipital

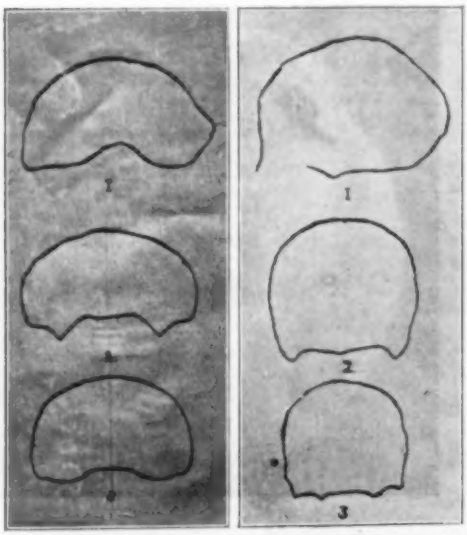
FIG. 4.

Macerated skull seen from the side, showing the projection in the lambdoid region.

bone. The external auditory meati, which looked directly downwards, were situated 5 centimetres internal to the lateral edge of the base of the skull. In the centre of the base was a large depression, 7 centimetres by 6 centimetres, in which were situated the foramen magnum, occipital condyles, and basi-occipital bone, with the anterior condylar

and posterior and middle lacerated foramina. The shape of the whole skull may be compared with that of a mushroom from its round shape, its flat base with central depression and the overhanging bluntly rounded edge at the junction of the vertex and base. The bony processes at the base were poorly developed. The superior surface of the base showed a marked projection corresponding with the above-mentioned depression. Seen from within, the junction of the vertex and base formed an acute angle from the spheno-squamosal suture backwards. The line of this angle extended from the uppermost limit of the parieto-squamosal suture on either side to the lambda. The mastoid and pterygoid processes were very small. Large anterior and posterior interparietal bones were present. The parietal bones were unduly large, whereas the occipital and temporal bones were very small. Along the line of the coronal suture were several large Wormian bones, and in the squamo-parietal and occipito-parietal suture were hundreds of Wormian bones forming a continuous band from 3 centimetres to 5 centimetres broad (Fig. 6). In the lower parietal region, in the squamosal region, and in the ex-occipital region the bones were very thin, but in the region of the sagittal suture and in the frontal and lambdoid regions they were of normal thickness.

FIG. 5.



A. Tracings of the outline of the skull. 1, Antero-posterior diameter. 2, Coronal at the level of the mastoid processes. 3, Coronal at the level of the occipital condyles.
B. Tracings of the outline of a normal adult skull. 1, Antero-posterior diameter. 2, Coronal at the level of the mastoid processes. 3, Coronal at the level of the occipital condyles.

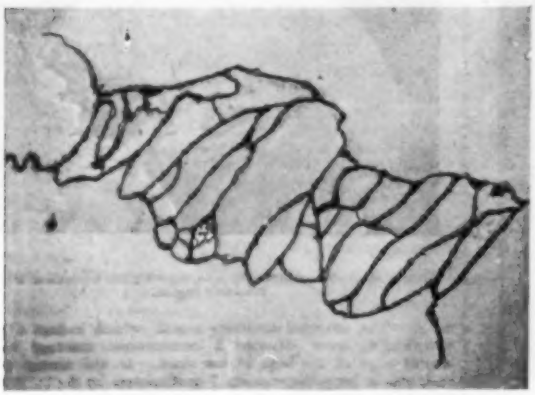
There are several points of considerable interest and still greater difficulty in this case:—

1. The usual signs of syringomyelia were absent, though it must be allowed that the examination of sensibility was not sufficiently thorough to exclude absolutely the presence of some sensory change. While fissuring and central gliosis of the spinal cord are not rarely met with in the absence of symptoms, they are found most commonly in children and are accompanied by little or no distension of the cavities present. Absence of the usual symptoms, where there is such distension of the spinal cord as occurred in this case, is very rare. Baumler[2] collected 25 recorded cases in which the syringomyelia was not discovered till the necropsy, but in only a few of these cases was the clinical record complete. Turner and Mackintosh[3] record a case with necropsy in which, as in this case, there was left hemiparesis without local muscular wasting, but in this case the condition of sensibility was orthodox.

2. Deformities of the skull appear to be rare in cases of syringomyelia and in most of the recorded cases the deformity has approached to the acromegalous type.[4] In some of these other signs of acromegaly have existed, and since enlargement of the pituitary body has been found in several cases where this deformity existed it is considered that in these cases syringomyelia and acromegaly occur together.[5] Dr. W. S. Colman[6] and Westphal[7] have drawn attention to bossing of the frontal and parietal eminences and prominence of the forehead in syringomyelia. During the last three years four cases of syringomyelia in the wards of the National Hospital for the Paralysed and Epileptic presented marked cranial deformity, which was said to have come on after the symptoms of syringomyelia were declared. One of these patients had well-marked signs of acromegaly and the deformity of the skull was of the acromegalous type; the other three cases presented steep overhanging foreheads with frontal and parietal bosses, closely corresponding to Dr. Colman's description. In two of the cases the diagnosis was verified. Owing to the severity of the pain laminectomy and puncture of the spinal cord, to relieve pressure, were performed with the most successful result.

The skull in this case presented features altogether different from those just mentioned, and since the deformity was plainly visible at the age of five years and had not appreciably altered, to the patient's knowledge, since that time, one is led to look for the cause of the deformity in the severe injury which had occurred in infancy. The calcified plates in the dura mater might also have resulted from hæmorrhage occurring at the time of this injury. Could the condition of syringomyelia have been caused by this injury? The cavities in the cord involved the posterior horns—regions where hæmorrhage takes place most commonly and spreads most easily in the spinal cord. A lining membrane of columnar epithelium present in the upper cavity and absent in the lower cavity of this spinal cord is said to be no criterion as to the mode of origin of such cavities. Cases in which typical progressive syringomyelia developed from hæmatomyelia are on record and have been verified. In these cases, however, it seems almost impossible to exclude the pre-existence of a cavity into which subsequent hæmorrhage had taken place. Moreover, in such recorded cases as I have been able to find the symptoms of the hæmatomyelia were permanent. It is difficult to conceive how a hæmorrhage into the spinal cord of such an extent should have occurred without producing some permanent

FIG. 6.



Some of the Wormian bones in the lambdoid suture. (Natural size.)

[2] Deutsches Archiv für Klinische Medicin, Band xl., 1887.
[3] Brain, 1896, vol. xix., p. 322.
[4] Hotschewnikoff and Recklinghausen, Archives de Virchow, tome cxix., 1890.
[5] Ibid.
[6] THE LANCET, May 6th, 1899, p. 1205.
[7] Brain, vol. vi., p. 154.

alteration of the functions of the spinal cord, and this patient led an active artisan's life for 15 years, having no signs of paraplegia. Another difficulty present is that no local pathological condition in the brain was found to account for the occurrence of the localised epilepsy.

It has been several times noted that some patients with syringomyelia bear operations and anæsthetics badly, and in a few reported cases, as in this one, an unexpected and rapid fatal result has occurred.

Wimpole-street, W.

FILARIASIS AND ITS CONSEQUENCES IN FIJI.

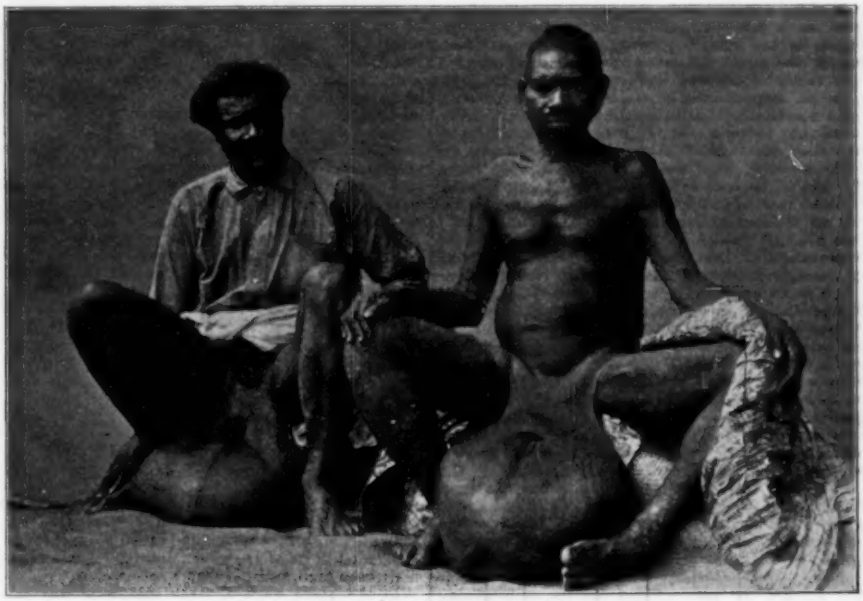
BY MORGAN I. FINUCANE, M.R.C.S. ENG., L.S.A., F.R.G.S.,

GOVERNMENT MEDICAL OFFICER AND PROVINCIAL INSPECTOR OF THE PROVINCES OF TAILEVU AND RA.

THE prevalence of filariasis amongst natives and Europeans and its commonest result, elephantiasis of the scrotum, in the South Seas, and especially in Fiji, lead me to think that a description of the operation as usually performed in the Colonial Hospital at Suva, Fiji, would be of interest to your European readers. The illustrations[1] which accompany these notes will show the formidable nature of the condition.

The patient being placed under deep anæsthesia—chloroform is invariably used in Fiji with good results—the scrotal tumour is well lifted up by an assistant and an Esmarch's elastic tourniquet is tightly pulled around the base or pedicle of the tumour; a couple of turns are necessary. The ends of the elastic tourniquet are brought obliquely across Poupart's ligament above the crest of the pelvis to unite behind or at the side, and undue pressure is prevented by padding near the various bony points with cotton-wool. There is now before the operator a huge scrotal mass, in the upper and central portion of which there is a circular depression, the preputial orifice, at the bottom of which is the penis deeply buried in the surrounding elephantoid growth. The index finger of the left hand is now introduced into this circular opening and the glans penis is felt. A curved, blunt-pointed bistoury is now passed along a grooved director or the finger above the glans penis, which is thus avoided, and the skin and subcutaneous tissues freely divided for from one and a half inches to two inches. The glans penis is then seized and drawn forward and isolated and a No. 8 silver catheter is passed, an assistant holding the penis well dragged forward on the catheter and raised towards the abdomen. The penis is then dissected out, the surgeon removing freely all elephantoid prepuce and in clearing it the catheter acts as a safe guide in avoiding the urethra, a wound of which might readily be made in its absence. When this is completed the penis with catheter *in situ* is held well up by an assistant over the abdomen. A long incision is then made from the external abdominal ring over the centre of each testicle almost to the lower margin of the scrotum. A largish strong scalpel or small-sized amputating knife will be found best for dividing the large, thick, and indurated elephantoid scrotum which is so commonly found in chronic cases coming for operation. A free cutting incision must be made the whole length of the first skin incision. Numerous transverse fibrous bands will be met with and require division, and the knife, if not firmly held, will be apt to slip, as there is a continuous exudation of varying quantities of serous and blood-stained fluid. The tunica vaginalis being readily recognised is freed at its lower end and dissected out with its contents by a process of tearing and cutting. Some care is required in dissecting out the cord and removing masses of elephantoid gelatinous tissue adhering to it; a few large veins also sometimes require ligature. It is very rare to find cases of elephantiasis requiring operation in which there is not a hydrocele. In fact, as a rule the hydrocele is very large, accounting in a good many cases for the size of the tumour.

It is now necessary, having dissected out both testes and cord right up to the external abdominal ring, to evacuate the contents of the hydrocele with a trocar and canula, afterwards cutting away the thickened elephantoid tunica vaginalis, leaving only the testis and cord on each side. Both testes being held up over the abdominal wall, the operator proceeds to fix the base of the tumour by skewers introduced as high up as possible, so as to avoid all



Two typical cases of elephantiasis of the scrotum.

[1] We have selected for reproduction one from the many interesting photographs sent to us by Mr. Finucane.—ED. L.

elephantoid tissues, but immediately below the tourniquet. He passes the point of the skewer transversely across the perineum, guided by his left index finger. He carefully avoids the urethra which might easily be transfixed if care were not taken and he makes the point emerge as high as possible on the opposite side at a point corresponding to the entrance wound. A strong cork is then put on the point of the skewer to avoid injuring the left leg. The second skewer is introduced on the left side and as near the posterior part of the perineum as possible; it is similarly dealt with and secured on the right side by another cork. These skewers act as a hold on the perineal skin after division of the tumour and prevent retraction of the mass and play an important part in preventing hæmorrhage; in fact, the removal of the largest elephantiasis can be carried out in an almost bloodless way if this course is pursued. The surgeon then divides the tumour about a line's length below the lower skewer, cutting freely through the growth in front and working circularly around the tumour, dividing last the retracting perineum. Were it not for the skewers on removal of the growth the retracting perineum would slip through the Esmarch's tourniquet and considerable hæmorrhage delay the completion of the operation. The vessels are now picked up one by one and tied at once, in largish tumours as many as 20 or 30 being met with requiring a ligature. The skewers are now removed, the tourniquet is loosened, and general oozing is dealt with, of which sometimes there is a considerable quantity from enlarged veins about the testes and cords. The edges of what is really part of the perineum and inner sides of the thigh are now brought together and the paucity of skin is sometimes alarming, leading the operator to fear whether he may be able to accommodate the now swollen testes. The skin, however, here is readily adaptable and a good scrotum can always be fashioned.

In native Fijians it is rarely necessary to drain the new scrotum; wire and silk sutures are put in the whole length and as much of the denuded penis covered up by surrounding healthy skin as is possible. Healing of the scrotum by first intention is the rule, but owing to the necessity of granulation of the penis the recovery in Fiji after this operation is rarely completed under three months. In operating on an elephantiasis of the scrotum the possible presence of a hernia complicating matters must be carefully borne in mind. It is not a common experience in Fiji, but nevertheless does occasionally occur. Fijians as a rule do not come for operation until the growth is large and it is unusual for any to be seen in the Colonial Hospital under 10 lb. in weight, and some cases have been enormous, one recorded by Sir William McGregor weighing 100 lb.

As to the clinical history of filariasis and its results in Fiji, it is prevalent all over the Fijian group and attacks every race, being, of course, more common among native Fijians. It is to be seen in its most virulent forms in low-lying, swampy districts, such as on the Rewa Delta. It is almost impossible to find an adult person free from elephantoid enlargement of some portion of the body in the coast towns of Ra province, and it is extremely common in the mountain villages of Colo in Viti Levu. Needless to say, bush, town swamps, stagnant water, and mosquitoes abound in all Fijian villages.

Cutaneous and deep lymphatic varix and orchitis, lymph scrotum and elephantiasis, are all to be met with in varying stages of the disease. Elephantoid enlargement of the leg, the arm, and the breast is very common amongst Fijian women, and the disease is occasionally met with attacking the vulva. Every growing Fijian child suffers periodically from "wagaga," which is simply an attack of lymphangitis, generally occurring in an extremity, an arm or a leg, but most frequently in the male it affects the testicle or cord, suggesting a commencing "epididymitis." With this "wagaga" there is fever, headache, and general malaise. It is not common to be able to define or see the inflamed lymphatic cord in the native, though amongst Europeans and half-castes it is nearly always noticeable. The commonest result in these cases is the formation of an abscess which terminates the attack, and the patient returns to his ordinary health to await another outburst of filariasis, most Fijians being liable to four or five such attacks annually. It would be rare to find a Fijian who did not bear on his body the many previous scars of former filarial abscesses, either opened by a surgeon's knife or by the natural process of suppuration, or more commonly as the result of his own incision by a sharpened bamboo. The character of the abscess is small and circular, and on excision there exudes thick, creamy pus, followed by a small clot or flow of blood, suggestive of embolic plugging of an area of capillary or lymphatic tissue. Other cases I have seen where the lymphangitis stopped short of suppuration, producing diffuse matting together of the tissues of the abdominal wall, and where the patient passed rapidly into a septic condition and died. In the earlier stages, before any local symptoms show themselves, these cases are extremely puzzling and much resemble the remittent form of malaria, a disease happily almost unknown in Fiji.

The chronic variety of filariasis producing elephantiasis is next to abscess the commonest form in Fiji and for it the operation described above has to be frequently performed. Chyluria is rare in Fiji and the filarial attacks more commonly result in the other conditions already described.

Quinine is given with good effect in acute filarial attacks and at the same time local remedies are employed.

A CASE OF MOLLITIES OSSIUM WITH SPONTANEOUS FRACTURE THROUGH THE GREAT TROCHANTER OF THE LEFT FEMUR.

BY J. HOGGAN EWART, M.D. EDIN.

THE following case presents many points of interest.

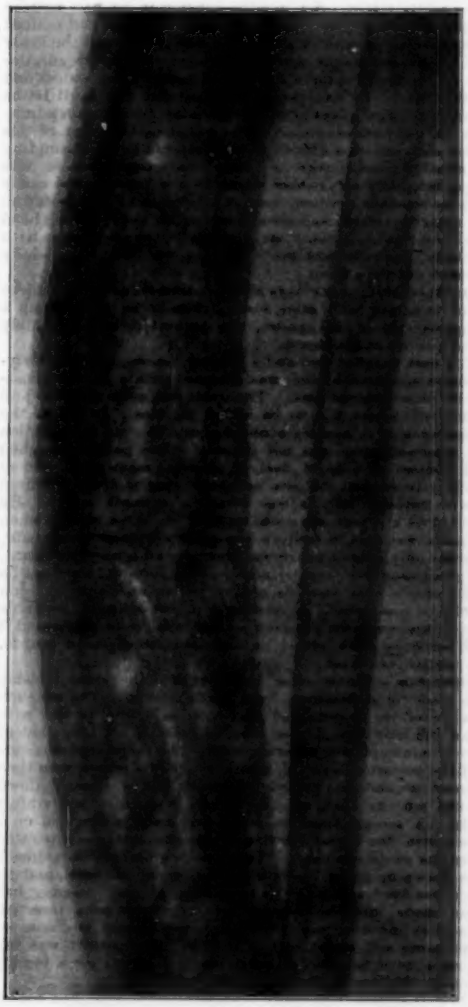
The patient was a widow, aged 65 years. Her mother had died from cancer at the age of 50 years. There was no history of bone troubles in the family. The patient had always had very comfortable surroundings. She had had no severe illnesses, but had suffered from menorrhagia for several years and a polypus was removed from the uterus 14 years ago. She had had 10 children, but with the exception of the first confinement, which was tedious, there was nothing to note. She had always led a very active life. 14 years ago she first noticed that her left ankle was thicker than the right, and she showed it to a medical man who told her not to worry, and she left it alone for two years, when she showed it to Dr. Douglas of Newbury, who has kindly sent me a note to the effect that she consulted him for rheumatism and he discovered a yielding of the tibiæ and warned her that if she persisted in walking she would find herself with broken bones. She did not trouble herself much, but gradually she noticed that the right shin-bone was becoming very bent like the left. However, she managed to get about with the help of a stick. On March 1st last she suddenly felt a pain in the upper part of the left thigh and associated it with a small lipoma which had existed for years. The pain increased and she saw a medical man who told her that it was rheumatism and ordered hot fomentations and massage, but on March 15th while walking with a stick and leaning on her daughter's arm they both heard a crack and the patient subsided on to the ground. I saw her shortly after the accident and diagnosing an extra-capsular fracture of the left femur put the limb up on a Liston's long splint with weight extension and gave a very guarded prognosis. I noted great deformity affecting the left side of the pelvis, both femurs, and both tibiæ; all the other bones, however, were normal. The urine showed a marked increase in phosphates. About three weeks after the accident a skiagram was taken (see Fig.), which showed the fracture which had taken place through the great trochanter of the left femur. The splint was removed at the fifth week and sand bags were substituted.

At the ninth week another skiagram was taken which showed that the fracture had united with osseous union, a large amount of callus having been thrown out. This condition could also be verified by manipulation. A third skiagram was taken which showed the deformity affecting the left tibia (see figure). This skiagram is interesting in that it shows the effect of the disease on the texture of the bone. It will be seen that the tibia is more pervious to the x rays in some parts than in others, so that it presents a mottled appearance. The fibula appears to be unaffected. (Note that the fibula should normally appear as a shadow over the length of the tibia, the skiagram having been taken from the inside.)

The patient is now (11 weeks (?) after the accident) able

to go out in a chair and suffers no pain. She does not put any weight on the legs for fear the tibiæ might give way.

The following measurements are worthy of note. Left leg: from the anterior superior spine to the internal malleolus, 30½ inches; from the anterior superior spine to the ischial tuberosity, 11 inches; circumference at the knee, 14 inches; at the calf, 11¼ inches. Right leg: from the anterior superior spine to the internal malleolus, 31½ inches; from the anterior superior spine to the ischial tuberosity, 10 inches; circumference at the knee, 13¼ inches; at the calf, 10¾ inches. Interspinous, 14 inches.



The osteo-malacious left tibia. The skiagram has been taken from the inner aspect of the limb, as is obvious from the relation of the bones to each other.

The special points in the case are (1) the duration of the disease (14 years) with so little discomfort; (2) the small number of bones affected—viz., the left side of the pelvis, both femurs, and the tibiæ; and (3) the age of the patient (65 years) and the fact that callus was thrown out and union occurred in nine weeks.

My thanks are due to Mr. Stainer of this town who kindly took the skiagrams.

Folkestone.

A CASE OF COBRA-POISONING TREATED WITH CALMETTE'S ANTIVENINE.

BY W. HANNA, M.A., M.B. R.U.I., D.P.H. CANTAB.,
AND
GEORGE LAMB, M.B. GLASG.,
CAPTAIN, I.M.S.
(From the Research Laboratory, Bombay.)

THE following record of a case of cobra-poisoning is of interest inasmuch as the identity of the snake was without doubt. All the symptoms were carefully noted from the beginning, and the only treatment employed was the injection of Calmette's antivenine.

On Oct. 6th, 1900, one of us was assisting in the extraction of poison from a full-sized cobra. Before proceeding to compress the glands in order to expel the poison the operator was clearing away some mucous secretion from the neighbourhood of the mouth. This was being done with a small piece of cotton-wool held in the naked hand. The snake at the time was firmly held just behind the head in the hand of an experienced native snake-man. By some means or other the snake buried its right fang through the cotton-wool into the point of the operator's right thumb. The thumb was withdrawn practically instantaneously, but, as the after-history will show, not before a considerable quantum of poison had been injected. It is worthy of note that immediately afterwards four large drops of venom were pressed from the left gland, while none was obtained from the gland of the opposite side. As the wound was at first considered to be a trifling one, and as the snake was not believed to have injected any poison, no local treatment was employed except sucking the wound. This was done thoroughly and free bleeding occurred.

On the advice of Mr. Haffkine, at from 20 minutes to half-an-hour after the bite 18 cubic centimetres of Calmette's antivenomous serum were injected, half into each flank. This serum, which was from four to five years old and had been in Bombay as the property of the Bombay Natural History Society for about four years, was the only serum available at the time. It may be stated here that some experiments on rats, made by us some few days previously to the accident here recorded, had shown this serum to have deteriorated to such an extent that it only retained about one-fourth of the neutralising power which Calmette's standardisation had ascribed to it. These experiments, along with others which are at present in progress, will form the subject matter of another communication. About two and a half hours after this dose of serum had been administered some general symptoms of cobra-poisoning referable to the nervous system set in. In chronological order these were as follows. There were first disinclination to work and lethargy, and then followed nausea and vomiting, accompanied by slight paresis of the legs. While these symptoms were still present some fresh serum, dated May 8th, 1900, was procured. Ten cubic centimetres of this were at once injected into the left flank; that is, about three and a half hours after the bite. Nausea and weakness of the legs continued for some time. From two to three hours, however, after the second dose of serum all symptoms had passed away.

Locally at the moment of injection there was much pain at the site of the wound. This pain increased and was soon followed by considerable swelling of the whole of the thumb, which in a few hours became exceedingly tense and very painful. There was much extravasation of blood into the tissues around the puncture, while a bloody exudation oozed out from the wound for 24 hours at least after its infliction. During this time also there were pain and tenderness along the tract of the median nerve into the axilla; tenderness was especially well marked at the bend of the elbow and in the axilla. There was also some anæsthesia of the anterior surfaces of the three and a half outer fingers, the superficial finger distribution of the median nerve. There was neither enlargement nor tenderness of any of the lymphatic glands. It soon became apparent that a slough was going to form round the site of inoculation. This slough became demarcated in a few days. It was of the size of a threepenny-piece. It came away in about three weeks' time and left a hole a quarter of an inch deep. This wound has

gradually granulated up and now (six weeks after the accident) it is nearly healed.

The case is an interesting one and worthy of record as one in which the identity of the snake was beyond doubt; and further, the case was under observation from the first, and symptoms, both local and general, were carefully noted as they appeared. It also points to the efficacy of Calmette's serum when fresh, even when general symptoms have appeared and in spite practically of no local treatment, not even a ligature.

The following conclusions can be drawn:—1. That great care is required in handling poisonous snakes. 2. That the puncture of a fang of a passive snake is not to be neglected, as a considerable amount of poison may be forced out from the gland through reflex action, initiated by simple pressure on the fang. 3. That thorough sucking of the wound is of little avail as a local treatment; the poison lies deep, is viscid, and the bleeding in all probability takes place from superficial vessels. 4. That it is advisable to keep a stock of *fresh* antivenomous serum in dispensaries in India, and the use of this serum is not to be neglected even after general symptoms have set in.

Bombay.

MEMBRANOUS ŒSOPHAGITIS;

EXPULSION OF A COMPLETE CAST OF THE ŒSOPHAGUS.

BY NATHAN RAW, M.D. DURH., F.R.S. EDIN.,
MEDICAL SUPERINTENDENT OF THE MILL-ROAD INFIRMARY, LIVERPOOL.

(*With Coloured Illustration.*)

THE following most remarkable case occurred in a man aged 46 years, a labourer, who was admitted into the Mill-road Infirmary, Liverpool, on April 10th, 1900, complaining of pain beneath his sternum and difficulty in swallowing. For several years he had been a heavy drinker and had always drunk neat whisky, which invariably caused a burning sensation in his throat and down the line of his œsophagus. During the last six months he had had increasing difficulty in swallowing solids, and on admission to the infirmary he could only swallow fluids. When asked why he continued to drink when it caused him pain he replied that it gave him a "feeling of satisfaction," that the neat whisky did him good. On April 16th after a violent fit of coughing he vomited a complete cast of his œsophagus eight and a half inches long. It was very foul-smelling and of a dirty greenish appearance. The nurse stated that he nearly choked in endeavouring to expel it, but that he seized it with both hands and dragged it out.

Etiology.—Inflammation of the œsophagus is caused by the immediate contact of irritants swallowed, especially hot liquids, corrosive fluids, and by the continued action of irritating substances repeatedly swallowed, such as strong alcoholic drinks (Fitz). In this case the patient had practised a foolish custom (only too prevalent in Liverpool) of drinking neat brandy and whisky and at times rum, more especially in the early morning.

Morbid anatomy.—Follicular, fibrinous, and diphtheritic inflammations of the surface of the œsophagus occur, whilst still another variety is the phlegmonous inflammation of the connective tissue of the wall. I am inclined to think that my case is one of the latter variety.

The number of cases on record of this rare disease is very few and I have only been able to find five others, and no previous case in this country has, so far as I know, been described.

The condition known as exfoliative or desquamative inflammation of the œsophagus, or by the term most recently applied, "œsophagitis dissecans superficialis," was first described by Birch-Hirschfeld in Ziemssen, vol. viii., page 140. In this remarkable case a woman vomited a complete cast of her œsophagus, which on examination was found to consist of the epithelial layer infiltrated with round cells. In Reichmann's case this epidermoid layer was free from leucocytes, whilst Fitz records a similar condition which was exfoliated from the gullet of an infant who had taken a dose of chloral. Rosenberg reports a case where the mucous membrane was both streaked with blood and infiltrated with leucocytes. Sclavunos reports a fifth case in which the epidermic tube was inverted.

Phlegmonous œsophagitis is a suppurative inflammation of the submucous tissue results or the pus completely encircling the œsophagus may follow its length even to the stomach (Fitz). After separation of the slough healing takes place, scars result, and if the corrosion has extended to the muscular coat, extreme, or as in the present case complete, stenosis follows.

Symptoms.—On admission the patient was a thin spare man, having the appearance of recent emaciation. His weight was exactly 100 lb. Six months previously he first noticed some difficulty in swallowing solids. Lately he had noticed that anything of a solid nature seemed to stick at the lower part of his œsophagus, although he never had any regurgitation of food. Cold liquids produced pain during transit and for this reason he had taken warm drinks. On April 1st he vomited a large quantity of blood-stained fluid. On admission he had tenderness on pressure along the line of his gullet and pain of a diffuse nature, especially on attempting to swallow. Stricture or some malignant disease was suspected, but a soft rubber stomach-tube passed quite easily into the stomach without pain or discomfort. He preferred the upright position and always sat up in bed with his head fixed and rigid. A diagnosis of spasm of the œsophagus with alcoholic gastritis was made and he was fed on carefully warmed nutritive fluids.

On April 16th, or six days after admission, he had a violent fit of coughing and after some difficulty he vomited up a complete cast of his gullet, the patient himself forcibly pulling it out of his mouth.

The cast weighed two and a quarter ounces, was of a dirty-greenish appearance, and was streaked with a purulent coating of blood-stained pus. The smell was most offensive and some disinfectant had to be added at once. It had all the appearance of a complete œsophagus, but on examination the muscular layer was not present. The patient coughed and vomited up a good deal of purulent matter and seemed much relieved, but the pain on attempting to drink any fluid was so intense that he was afraid afterwards to try. He was fed on nutrient enemata for two or three weeks, when he again was able to swallow some fluids without much pain, but was only able to get down a very small quantity at once. He was losing flesh rapidly and it was quite evident that he had considerable stenosis of his gullet and that it soon would be complete. Accordingly it was thought desirable that if the operation of gastrostomy was to be performed it had better be done whilst he had some strength to bear it. He readily consented.

Operation.—Under ether on May 12th the usual incision was made for gastrostomy by Albert's method. The stomach was found to be retracted and collapsed, and it was with some difficulty that I was able to draw out a long conical diverticulum of the anterior wall. The parietal peritoneum and the posterior layer of the sheath of the rectus were then sutured around and through the walls of the stomach down to the mucous coat, and the suture was pulled moderately tight. A second small incision was made above and on a level with the costal cartilages and the skin was separated from the subjacent parts. The diverticulum of the stomach was drawn up under the skin to the second incision, and its apex was fixed with a few sutures after a small opening had been made into the stomach and a rubber tube inserted. The first incision was then completely closed and covered with gauze and sealed with collodion. The patient was fed at once with one pint of milk, beef juice, and some brandy through the tube, as he was rather collapsed.

The operation was quite successful, as the incision healed by first intention, and the sutures were removed on the eighth day. He recovered nicely for a time and was able to feed himself regularly, but three weeks after the operation he commenced to regurgitate large quantities of gastric juice followed by the food in a form which except for the curdling of milk did not appear to be altered.

After-progress.—It was evident that despite washing out his stomach regularly with an antiseptic and the most careful feeding he was not able to digest food, and it occurred to me that perhaps the mucous membrane of his stomach and intestine might be similarly affected. He was in addition fed per rectum as he could not swallow at all, there being complete stenosis of the gullet. He accordingly slowly went down hill and died from asthenia six weeks after the operation. His weight at death was 87 lb.

Necropsy.—A post-mortem examination was made 24 hours after death. The body was greatly emaciated. The digestive

Fig. 1.

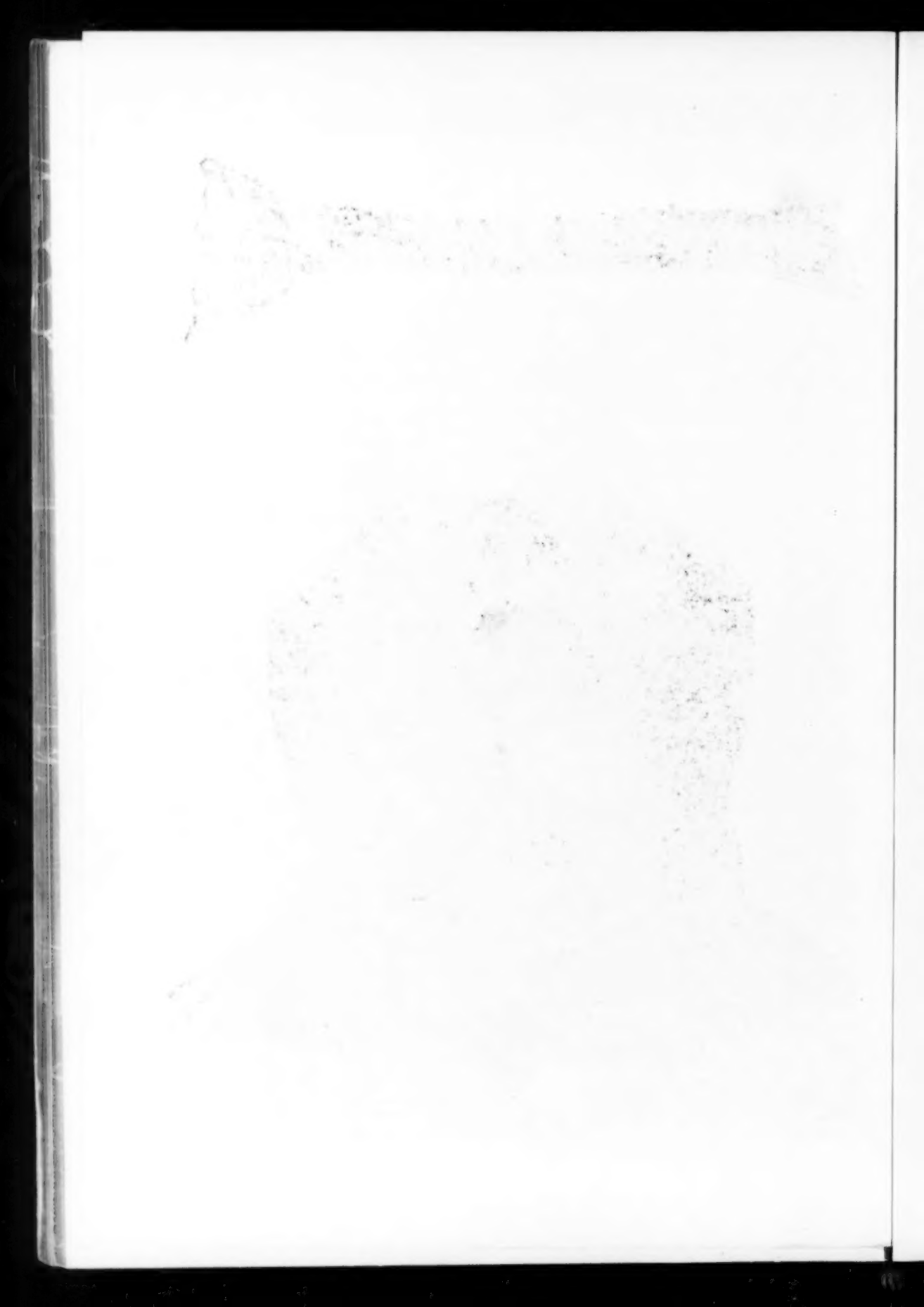
J. H.

TO ILLUSTRATE DR. NATHAN RAW'S CASE OF "MEMBRANOUS ŒSOPHAGITIS."

Fig. 2.

M. G.

TO ILLUSTRATE DR. W. J. COLLINS'S CASE OF "PHAGEDÆNIC CHANCRE OF THE LIP."



organs were removed *en masse* for careful examination. The stenosis of the œsophagus was complete from the upper third right up to the pharynx. Below, down to the stomach, it would only admit a medium-sized catheter. There was no trace of any mucous lining anywhere, except near the cardiac end of the stomach, the cast having separated one inch above the entrance to the stomach. The stomach was small and was firmly united to the skin wound. On opening it one was particularly struck with the apparent absence of mucous membrane; the wall was almost smooth and the rugæ were represented by indistinct lines; very little secreting surface was left and that near the pylorus. There were no evidences of gastritis. The intestines were atrophied and the mucous coat of the duodenum was smooth and thin, though otherwise healthy. There were no other symptoms of organic disease, except some brown atrophy of the heart.

The following description of the cast is by Dr. R. J. M. Buchanan, physician to the Stanley Hospital, Liverpool. "The cast was in the form of a tube, eight and a half inches long, of a greenish-gray colour, and with a smooth but somewhat corrugated external surface. The inner surface of the tube had the appearance of sloughing tissue, and it was ragged and undermined in comparison with the smooth outer surface. The cast was very tough and elastic; it was with difficulty that pieces could be cut from it for microscopical purposes. Portions of it were hardened and dehydrated in absolute alcohol passed through cedar-oil and embedded in paraffin. Sections were cut with the rocking microtome. The tough fibrinous nature of the tissue was rendered very apparent by the resistance which it offered to the microtome knife. The sections were stained with Ehrlich's acid hæmatoxylin and mounted in Canada balsam.

Microscopical examination showed that the cast was a complete slough of the inner layers of the œsophagus as far as the muscularis externa. The superficial epithelium had almost entirely disappeared in the deeper parts of the folds of the mucosa. A very few degenerated cells remained which were scattered in patches. Small ulcerations of the mucosa, in the form of flask-shaped pits, were completely filled with micrococci and rod-shaped bacilli. The denser tissue immediately beneath the epithelial layer had retained its characteristic structure in parts, but was broken through by the small ulcerations extending from the surface. The remainder of the mucosa and submucosa was invaded by a fibrinous network filling up the spaces between the degenerate fibrous tissue. This fibrinous network was similar in appearance to a diphtheritic membrane. Here and there could be recognised muscular fibres from the muscularis mucosæ. The meshes of the net-work were crowded with leucocytes and rod-shaped bacilli, the latter very varied in shape, which had stained irregularly, similar to the diptheria bacillus. Minute hæmorrhagic extravasations from the vessels had evidently taken place at different times and the remains lay scattered about. The blood-vessels were blocked with thrombi and the lymphatics were dilated with coagulated exudation. The condition revealed by microscopical examination is suggestive of a submucous dissecting cellulitis leading to complete separation of the inner coats of the gullet."

Remarks by Dr. NATHAN RAW.—The case seems to be unique in this country, the few others recorded having occurred in Germany and America. The cause in this case was neat spirits, of which the patient had taken a very large quantity, and yet at the necropsy no evidences of cirrhosis of any organs were observed. The disease had evidently not been confined to the mucous lining of the œsophagus, but had attacked that of the stomach to a minor extent. With regard to the operation of gastrostomy I am inclined to think that Albert's method has no advantages over those of Howse or Witzel, and it is certainly much more difficult to perform, especially if, as in my case, the stomach is small and retracted.

I am much indebted to Dr. Buchanan for the excellent description of the cast and to my assistant, Dr. F. S. Pitt-Taylor, for the after-treatment of the case.

Liverpool.

THE HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, BROMPTON.—It is officially announced that a site for the proposed country branch and convalescent home has been chosen at Heatherside near Bagshot, and the outlay is estimated at £20,000.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

LONDON TEMPERANCE HOSPITAL.

A CASE OF PHAGEDENIC CHANCRE OF THE UPPER LIP IN A YOUNG WOMAN; EARLY AND MARKED SECONDARY ULCERATION OF THE PALATE; EXEMPTION OF THE SKIN; REBELLIOUSNESS TO MERCURIAL TREATMENT; RAPID AMELIORATION UNDER IODIDE OF POTASSIUM.

(*With Coloured Illustration.*)

(Under the care of Dr. W. J. COLLINS.)

THE occurrence of phagedæna in a syphilitic sore is to be attributed probably to a secondary local inoculation of a septic organism and not merely to the debilitated condition of the general health. That the general condition, though predisposing to phagedæna, is not its sole cause is shown by the fact that when more than one syphilitic ulcer is present some may become phagedænic while the others may undergo no change. In the following case the improvement under iodide of potassium is certainly remarkable. The situation of the sore rendered it impossible to employ the continuous warm bath which is always so valuable in the treatment of phagedæna.

A young woman, aged 19 years, a domestic servant, of healthy appearance, with a tuberculous history on her mother's side, was admitted into the London Temperance Hospital on Feb. 27th, 1900, with an ulcerated swelling situated in the prolabium of the upper lip. The base of the ulcer which was somewhat of a trefoil shape, was hard and infiltrated, giving the appearance of a conical projection when seen in profile. The surface of the ulcer secreted a little thin pus which tended to encrust and the edges were sharply defined against the red muco-cutaneous surface of the labium. There were enlarged and tender glands below the mandible, more pronounced on the left side; the pre-auricular lymphatics were unaffected. Dr. Collins made a provisional diagnosis of a syphilitic chancre and ordered mercurial inunctions.

On March 21st the ulceration was noted to be slowly extending and the appearance was that of a phagedenic ulcer destroying the tissues of the lip. An examination of the blood for organisms gave a negative result. On the 24th the appearance of the ulcer was described as "crateriform." The temperature continued to be elevated, ranging between 99° and 100° F. and occasionally reaching 101°, and there was much pain in moving the lip; otherwise there were no constitutional symptoms. On April 5th an ulcer appeared on the left tonsil and on the 12th this had extended to the left side of the palate. Despite full doses of mercury externally and internally the condition of the lip was becoming worse rather than better, and the patient's condition was very deplorable. Ophthalmoscopically no change was to be seen and no eruption appeared on the skin.

On May 10th Dr. Collins decided to give up mercury in favour of large doses of iodide of potassium. An improvement was soon apparent in the lip, though the palate showed a sloughing appearance. The submaxillary glands became reduced in size and were no longer tender. On May 19th the edges of the ulcer on the upper lip were becoming healthy and a slough had separated. On the 28th there was rapid improvement. Some deformity of the upper lip resulted. The throat was still ulcerated. On June 19th the lip was well and the throat was now rapidly healing. There were no skin or ocular symptoms. Her general health was greatly ameliorated. On the 22nd the patient was discharged, apparently well. She was ordered to continue the iodide of potassium for a while and to return later for plastic

operation on the lip. Six months later the patient was well and the deformity was much less noticeable.

Remarks by Dr. COLLINS.—No explanation of the source of infection in this case was forthcoming, though it is difficult to doubt the nature of the disease. The extensive phagedæna, the early implication of the throat, the absence of any skin eruption, the rebelliousness to mercurial treatment, and the rapid improvement under potassium iodide are noteworthy features in the case.

LEEDS GENERAL INFIRMARY.

A CASE OF GENERALISED NEURO-FIBROMATOSIS WITH "FALSE NEUROMA" OF THE VAGUS NERVE.

(Under the care of Mr. B. G. A. MOYNIHAN.)

THERE can be no doubt that in some cases at least the soft pendulous tumours known as molluscum fibrosum are derived from an overgrowth of the fibrous tissue of nerves, but there is much more difficulty in proving that this is the origin of all the cases of molluscum fibrosum. It is not improbable that the fibrous tissue connected with other cutaneous structures may at times be the source of the hypertrophy. In Mr. Moynihan's case a tumour of a special

FIG. 1.

Front view of the patient.

nerve, the vagus, was associated with the general neuro-fibromatosis, and the apparent harmlessness of a resection of a considerable portion of this important nerve is very striking.

A man, aged 37 years, was admitted into the Leeds General Infirmary on July 31st, 1900. The patient, who was thin, slightly built, sallow, and of average intelligence, had noticed for the first time a swelling on the left side of the neck about six weeks previously. At that time the swelling was small, "hardly bigger than a nut," but the increase in size had been rapid and steadily progressive. At the time that the lump was first observed he began to suffer from an irritable cough, which was increased or induced by any sudden movement of the neck or by handling of the swelling. Persistent pressure of a collar or long handling brought about violent seizures of coughing with an alarming sensation of choking.

On examination a swelling three inches in length or a little more was felt on the left side of the neck lying over the common carotid artery, partially under cover of the sterno-mastoid muscle. The swelling was smooth, firm, though very slightly elastic, and moveable freely from side to side but not from above downwards. It was well defined and could be lifted from its bed so that the fingers almost met behind it. There was no pulsation in it. Manipulation of the tumour caused great respiratory irritation. During an attack of coughing thus induced, the swelling was found to present prominently in the posterior triangle of the neck. There was no interference with deglutition. The patient's voice was rather hoarse and metallic and was "thyroid" in character.

As regards the general condition of the patient the whole body was covered with soft excrescences, varying in size from that of a pin's head to that of a walnut. Some of these were sessile and others were broadly or finely pedunculate. The larger ones were very soft and suggested the appearance and feel of an almost empty umbilical hernial sac. All were quite irregular in distribution; no method in their arrangement could be conceived. Hair was entirely absent from them all. Over the whole body were irregular patches of pigment, of the colour of *café au lait*. The patches on the face were like pronounced freckles; elsewhere patches of the size of the palm of the hand were observed. Their arrangement seemed to be quite capricious, not following nerve distribution or the placing of the pendulous masses. The pigmentation and the excrescences were present at birth and had altered little or not at all. A careful examination did not reveal any "beading" of the nerves of the upper or lower extremities.

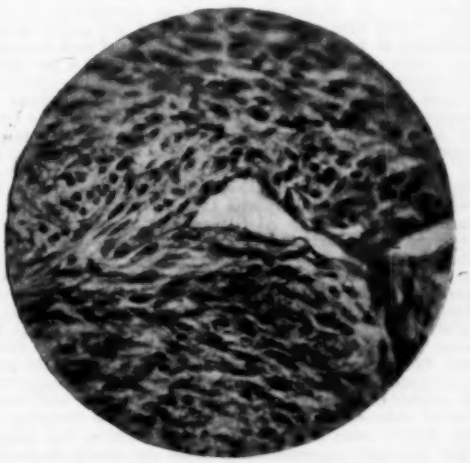
The patient's father, one brother living, and one brother dead, had all been covered with patches of brown pigmentation and soft excrescences such as these. No solitary tumours of the kind noticed in the neck had been noticed.

An incision was made along the anterior border of the sterno-mastoid for four and a half inches and the tumour was exposed. It was found to be fusiform in shape, tailing off at each end into a cord of the thickness of a lead pencil, knotted, gnarled, and tough. This cord extended up to the base of the skull and could be felt to extend downwards into the thorax. The whole of it was beaded in the same irregular fashion. This cord was clearly the vagus nerve in connexion with which the tumour was growing. A ligature was placed on the nerve above and below and the growth, with about three inches of nerve, was removed. After the operation the pulse varied from 80 to 96, the respirations were constantly 24, never varying from that so long as the patient remained in hospital. For 48 hours after the operation complaint was made of acute epigastric pain, but no tenderness or distension was observed. There was no vomiting. The voice was a trifle more husky than before for several days, but eventually returned to its former condition. The wound healed by first intention and the spasmodic seizures of dyspnœa and coughing entirely ceased. The patient left the hospital on Sept. 12th, 1900.

Pathological report by Mr. P. J. CAMMIDGE.—The tumour received for examination on August 10th is smoothly ovoid in shape, and measures 7·5 centimetres long by 5·0 centimetres at its greatest transverse diameter. Attached to either extremity is a portion of nerve, the one being 2·0 centimetres by 0·5 centimetre, and the other 2·5 centimetres by 0·6 centimetre. The tumour is covered by a glistening capsule, which is loosely adherent and easily strips. Shining through the capsule a number of small tortuous vessels are to be seen, but no strands of nerve tissue can be distinguished. On section the capsule appears to consist of loose areolar tissue arranged in layers and varies in thickness from 0·1 to 0·05 centimetre. Several compressed oval strands of nerve fibres lie between the capsule and the body of the tumour, but they are not attached to either and readily shell out. The general colour

of the tumour is a greyish-white, and mingled with this are numerous areas which have a deep yellow tint and some small patches which appear gelatinous and semi-transparent. To one side of the centre is a necrotic area measuring roughly 1·5 by 2·0 centimetres, and consisting of mucoid material mixed with loose fibres, the whole, together

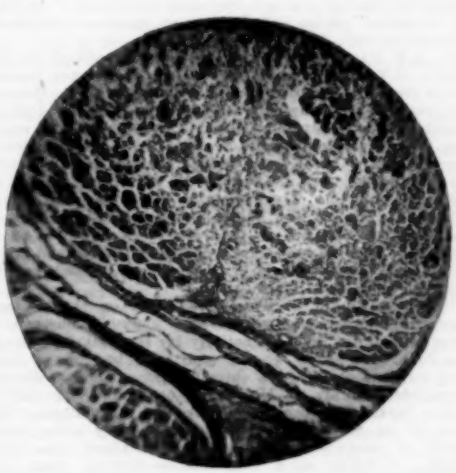
FIG. 2.



Microscopic appearance of the tumour under a high power.

with the tissue for a short distance round, being coloured a deep brown. A few small vessels and numerous points of brown pigment are scattered irregularly over the cut surface, but the collections of pigment are especially numerous in the neighbourhood of the capsule. The fibres of which the tumour is composed are arranged in whorls and

FIG. 3.



Microscopic appearance of the nerve trunk under a low power.

the yellow areas mentioned above are seen to be chiefly situated toward the centres of these whorls.

Microscopically the body of the tumour is composed of spindle-shaped cells, with large oval nuclei, closely packed together. Some are seen in transverse and others in longitudinal section; the arrangement of bundles and whorls noted with the naked eye is also seen microscopically. Numerous thin-walled vessels and blood spaces, lying in intimate contact with the cells, are scattered through the section. In the neighbourhood of these, and in places apart from any vessels, are patches of extravasated coloured corpuscles, such patches being more numerous in sections taken from near the capsule. Scattered patches of cells do not take the stain well and the nuclei are either indistinguishable or only faintly stained; a large number of cells are to be seen also which, although staining fairly well, are very granular and contain a large number of small fatty granules scattered through the protoplasm. These degenerate cells, as a rule, are more numerous about the centre of a whorl of more healthy cells. Most careful and repeated staining by Weigert's method has failed to reveal any nerve fibres in the body of the tumour. The capsule consists of loose areolar tissue in which are embedded numerous small blood-vessels, often surrounded by more or less extravasated blood which frequently extends widely into the surrounding areolar tissue.

Sections of the nerve bundles lying between the capsule and the tumour show marked fibrosis affecting both the endo- and peri-neurium, but chiefly the former. In places the increase of fibrous tissue is very marked, the nerve fibres being separated and surrounded by a well-marked ring of the new tissue; in others the increase is less marked, and in others again the appearance is almost normal. Unusual numbers of blood-vessels are also to be seen. In the nerve trunks connected with the tumour the epineurium appears to be slightly thickened and blood-vessels are more numerous than normal. In the perineurium there is some increase of the concentric lamellæ, the fibrous tissue of which gradually becomes merged into the endoneurium. In the endoneurium itself there is a marked increase, more particularly in some places where the individual nerve fibres are seen to be surrounded by a noticeable amount of new fibrous tissue. In longitudinal section the nerve fibres pursue an irregular undulating course and are separated by considerable amounts of fibrous tissue. These changes are more marked in the smaller of the two portions of nerve connected with the tumour.

The tumour is what is described as a "false neuroma"—i.e., a fibroma—arising in the course of a medullated nerve. The character and arrangement of the cells with the presence of so many thin-walled vessels are all, however, very suggestive of sarcoma.

Remarks by Mr. MOYNIHAN.—This case is an admirable example of generalised neuro-fibromatosis. The condition usually known as molluscum fibrosum was associated with a growth, possibly sarcomatous in nature, springing from the vagus nerve or its sheath on the left side of the neck. The question as to whether the soft pendulous masses distributed apparently at random over the whole body are soft fibromata originating in connexion with the sheaths of the peripheral nerves as held by Recklinghausen, or whether they are formed around the glands and hair follicles as suggested by Payne, cannot be considered as settled, though the balance of evidence is heavily weighted in favour of the former view.

The points of especial interest in this case are as follows: 1. The remarkable family history. The hereditary and inherited character of the disease is clearly apparent. 2. The general distribution of the soft, fibrous, more or less pendulous, nodules, and the brown pigmented areas, giving rise to the condition known as molluscum fibrosum. 3. The association with these of a localised tumour originating in connexion with the vagus nerve. The character of the tumour is probably that of the "secondary malignant neuroma" of Garré, of which the essential features are rapid growth, lack of infiltration except after recurrence, and absence of secondary deposits except in the latest stages. 4. The absence of any untoward effect after removal of a large portion of one vagus nerve.

A GENEROUS GIFT.—The town of Moreton Hampstead has been presented by the Hon. F. D. Smith, M.P., with a completely furnished hospital at a cost of £5000.

PAUPER FUNERALS.—At the meeting of the Swansea Board of Guardians held on Dec. 21st the undertaker to the union was censured for his action in taking the bodies of two paupers to the burial-ground in a grocer's cart and afterwards reading the burial service himself. The man admitted that he had followed this procedure in eight cases.

Medical Societies.

EPIDEMIOLOGICAL SOCIETY OF LONDON.

Plague.

A MEETING of this society was held on Dec. 14th, 1900, Dr. PATRICK MANSON, C.M.G., F.R.S., the President, being in the chair.

Dr. A. K. CHALMERS, medical officer of health of Glasgow, read a paper on the Plague in Britain in the Nineteenth Century. After shortly recounting the history of plague in Europe from the fourteenth century to the Malta epidemic of 1813 Dr. Chalmers passed on to consider the recent epidemic in Glasgow. He remarked that the origin of the outbreak was absolutely unknown. The first man attacked was a docker but employed on coasting vessels only, and he contracted it from his wife who sickened simultaneously with the infant whom she carried with her when hawking fish in the streets. Where they met the infection would never be known. Besides the cases traceable directly or indirectly to these and to the wakes were several of interest from their circumstances—a shoemaker and a man living on the other side of the river, neither of whom had to their knowledge had any communication with the infected family, though the one resided and the other visited at the adjoining houses. Then four cases occurred on Sept. 13th and 14th in a house where a person had died on August 28th from "pneumonia" (*sic*) with enlarged cervical glands. They were a man and his wife who had slept in a bed on which a previous case had died and which was presented to them by the friends of the deceased, and another case occurred in the same house. Some others who assisted with persons who had been present at the "wakes" might be looked on as cases of indirect infection. The origin of two cases at Govan on the other side of the river could not be explained. Special interest, however, attached to the case of the wife of a man employed in removing clothing from an infected house for further purification. So soon as a room was vacated its contents were exposed *in situ* for several hours to the vapours of liquefied sulphur dioxide and the floors, walls, &c., sprayed with formalin or chlorine. Clothing and bedding were then wrapped in sheets wetted with formalin and conveyed to the steam oven. The men employed in this work had all received immunising doses of Yersin's serum and none of them suffered. But the wife of one who lived at a distance from the infected district and had had no communication with contacts other than her husband was attacked and developed inguinal buboes, the most probable explanation being that he carried the infection in his hair, since they wore overalls at their work. Including fatal "pneumonias," &c., preceding recognised plague cases in the same houses, the attacks in the consecutive weeks ending August 4th to Sept. 22nd were 2, 0, 4, 10, 9 (2 at Govan), 2, 5, and 2, besides 2 in the hospital staff, the deaths in the respective weeks having been 2, 0, 2, 5, 3, 1, 2, and 1; in all, 36 cases with 16 deaths. With regard to the conditions of infectivity, the association of plague with gross insanitary conditions had never been questioned, but Dr. Chalmers was convinced that the susceptibility of the individual was greatly determined by the conditions amid which he lived. In Bombay those dustmen only whose homes were insanitary contracted the infection in the course of their work, and he believed that, as with typhus fever, the danger of infection in the wards of a well-conducted hospital was very small. In the Glasgow epidemic the virulence of the disease in the several foci was proportioned to their sanitary conditions and in the first centre further intensified by the overcrowding during the wake. The mortality among those who passed their incubation and sickened in their dirty homes was far higher than that of the contacts who were early removed to the purer air of the reception house, and in one house where 16 days elapsed between the first and the three secondary cases, two of which were mixed or septic infections, he was strongly inclined to believe that the bacilli had acquired increased virulence during a period of saprophytic existence in the filth of the tenement, every member of this family being attacked, while the 15 other families in the same house escaped. Professor Zabolotny of St. Petersburg, who was in Glasgow at the time, was much struck with the prolonged duration of many of the cases and the general mildness of the disease as compared with what he had observed in China and India and in the recent outbreaks at Kolubowka and Oporto. Indeed, if some of the cases that could not be accounted for were really due to direct infection the intervening terms of the series must have been so extremely mild as to have escaped recognition. In all 26 cases were admitted into the hospital and two occurred there. Eight of these died, giving a mortality of 28 per cent., approximately the same as in other recent outbreaks. In Smyrna it was 40 per cent., in Sydney 30, in Alexandria 48, and at Oporto among cases not treated with serum 63·7. But if the eight deaths occurring at home and not clearly recognised were included the death-rate at Glasgow would be really 44·4 per cent. Dr. Rosenau of Washington had shown that the bacilli of plague retained their virulence for 48 days in pieces of fabrics kept in the dark at a temperature as low as from 20° to 23° C., and if they could do the same or maintain a saprophytic existence in the hold of ships the introduction of the disease in the absence of known cases might be explained. The trade of Glasgow was largely carried on by vessels not plying directly with India or China but calling at various ports *en route*. At Glasgow no infection of rats was observed, for though they were plentiful in the district at the commencement of the outbreak they decamped so soon as disinfection of the drains and houses was begun. Nor were any of the rats obtained from vessels arriving from the East Indies, China, or elsewhere found to afford evidence of infection. There was no doubt as to the part played by these animals in the dissemination of the plague in India and China, but the species of rats differed in different continents and climates and so might their susceptibility. It might be merely a coincidence, but the old black rat of this country disappeared before the irruption of the brown one about the same time that the plague died out, and no conclusions could be drawn from the silence of Boghurst on the subject, his statement as to foxes and serpents dying from the plague being obviously the mere repetition of a tradition and not the personal observation of a London apothecary. In his extremely curious and interesting "Loimographia," which after having existed for 230 years in MS.[1] was transcribed and edited by Dr. J. F. Payne and printed at the cost of the Epidemiological Society in their Transactions for 1893-94, Boghurst expressed himself somewhat inconsistently as to the essential nature of the plague, but insisted strongly on the importance of insanitary surroundings, filth, and neglect of personal hygiene as predisposing and favouring conditions, "furthering occasions" as he called them, an opinion in which all were now agreed.

Dr. J. F. PAYNE said that there were records of the prevalence of the plague in Bombay in the seventeenth century and of its subsequent disappearance as in Europe. When it reappeared in any country it always did so in several places simultaneously, spreading by ordinary infection and recurring at intervals as it were *de novo*, as Pepys graphically described its progress from west to east in London during the year 1664-65, slower than if it had been carried by ordinary contagion. The expression "soil" as used by the writers of that time did not mean the earth only but included every extra human condition or factor. The existence of the bacillus as a saprophyte was undoubted and, as he had said in Allbutt's System of Medicine, it need not be feared in a really sanitary city.

Dr. F. TIDSWELL of Sydney remarked on the contrast between the large element of personal contagion observed in Glasgow and the evident activity of the rats in Sydney. The first case there was a man who had never been away but was carrier to a shipping firm. The rats died by thousands, and six of 15 caught on one wharf yielded plague bacilli, as proved by cultures and inoculations. The next 50 or 60 cases were men of every class, from clerks to labourers, employed in or about the same wharf. A family at a considerable distance were next attacked, but they frequented a dust-tip where refuse from the wharf was thrown. Then some cases occurred quite independently in some suburban houses of a good class, but plague rats were found in each. Save among the occupants of the same house direct contagion was never observed, unless the cases of a young man who stood for some hours in a crowd at the send-off of the Australian contingent and of a young woman superintending a stall at a bazaar were instances. There were very few secondary cases, plural

[1] British Museum, Sloane MS., 349.

attacks being either simultaneous or at intervals too long for connexion, and but one or two per 1000 of the scavengers contracted the disease. As to the rats, the only question could be whether the infection was conveyed by them to man or they contracted it from him. In every place the rats were attacked first and their dead bodies found before an outbreak, but he believed that fleas acted as intermediaries and vehicles, for though he had failed to infect animals by their means under natural conditions he had done so by inoculating an emulsion of such fleas and had found the bacilli in their bodies. As to types, most of his cases were bubonic, a few were septic, and two were pneumonic. Since, however, bubonic cases might take on these more dangerous characters he thought that by the early isolation of all cases the virulence of an epidemic might be lessened.

Dr. E. WILLOUGHBY wished to know whether the so-called "Australian" rats were specifically identical with Europe or of India and China, since there were none, indeed no mammals, indigenous to the country. It might be that as with the anopheles and the culices, the one was a source of danger and the other harmless in this respect.

The PRESIDENT said that he believed in rats but he believed also in fleas; there were, however, many species of rat and one, the musk rat, was stated to be immune. The Chinese illogically held a dead plague rat to be protective against infection, and he had recently been told of a thrifty native Christian and his guests being attacked after dining off rats that had died from the plague.

LIVERPOOL MEDICAL INSTITUTION.

Epidemic Arsenical Neuritis.

THE sixth ordinary meeting of this institution was held on Dec. 20th, Mr. EDGAR BROWNE, the President, being in the chair.

Dr. NATHAN RAW opened the discussion on Epidemic Arsenical Neuritis, remarking that during the last 12 months he had had 148 cases of neuritis under his care, most of them presenting the appearances of alcoholic neuritis. During the last month the symptoms were different, being more those of acute irritant poisoning than of chronic neuritis. He was of opinion that the first serious contamination of beer with arsenic took place about May last and a sudden contamination about the middle of November. He had found arsenic in the urine in five cases, all recent admissions, and although he had carefully examined 31 other cases no trace of arsenic could be found. He was of opinion that arsenic had a different action in the presence of alcohol.

Dr. ERNEST S. REYNOLDS (Manchester) gave a short account of the steps which led to the theory, and afterwards to the proof, that arsenic present in certain beers was the cause of the epidemic. He mentioned some symptoms not previously noted and stated that any treatment pursued should take account of the great heart weakness present. He finally referred to the possibility of arsenio-bacteria being present in the beer and having something to do with the carriage of the arsenic.

Mr. G. S. STANSFIELD (Birkenhead) stated that usually he had, as medical officer of the Birkenhead Union Workhouse, three or four cases of peripheral neuritis in the year, whereas recently there had been 32 cases, the increase beginning in October. The average time from first symptoms to admission was 11 weeks, the average age was 45 years, and although some were spirit-drinkers as well, yet all were beer-drinkers, on an average of three pints of beer per diem at 6*d*. per quart. The symptoms common to all were numbness in the hands and feet, pricking like pins or needles or "nettles," cutaneous and muscular hyperæsthesia, loss of knee-jerk, and ataxia. Pigmentation was, except in one case, so slight as to be overlooked, but it was present in one-third of the cases. Several patients had cardiac dilatation and bronchitis; severe sweating was seen in others and also desquamation. The beer used by several patients had been found to be free from arsenic, hence he would say (1) that there was an epidemic of peripheral neuritis; (2) that some of the cases had symptoms of arsenical poisoning; and (3) that the administration of arsenic in beer seemed to be more potent, since many patients had but one pint of beer per diem, the disease in one such case ending fatally.

Dr. R. J. M. BUCHANAN considered that this epidemic of peripheral neuritis conveyed a lesson emphasising the necessity of members of the medical profession individually to cultivate the faculties of observation and deduction to the highest degree; that the familiar association of alcohol and peripheral neuritis in relation to cause and effect had no doubt tended towards a want of credulity regarding the statements made by patients who denied excess, thus narrowing the field of mental vision and hindering the elucidation of the truth. Noticing the increase in number since July of patients at the Liverpool Stanley Hospital on his days of attendance with obscure nerve-pains and peripheral neuritis, cross-examination in reference to alcohol as a cause did not elicit excess or a history of spirit-drinking as a response The possibility of lead in beer was considered, but the special symptoms did not support the suspicion. The cases which had come under his notice exhibited several points of interest. 1. The history of beer-drinking in moderation only, in some cases not more than one and a half glasses per diem. 2. The peculiar alteration in the first sound of the heart, which approached the second in character, rendering the heart sounds "fœtal"; the small frequent pulse. 3. The hyperæsthesia and hyperalgesia of the lower extremities, particularly the feet, with anæsthesia of the fingers; the sweating of the hands and feet. In one patient the anæsthesia of the hands commenced in the thumb and gradually attacked each finger in sequence, the little finger last. In holding a cup by the handle the patient did not recognise that she held it safely until pain was felt in the fingers by the excessive pressure which she had to exercise. As a cigarette-maker her work was interfered with, not only by the anæsthesia of the fingers interfering with delicacy of touch and paresis with movement, but particularly by the production of pain. Paræsthesia was present in nearly all cases as a sensation of "prickling" or "pins and needles"; one man complained that he felt as if he were walking with his "bare feet upon ice"; another as if he had "a round ball under the sole of each foot," upon which he was always trying to balance himself to lessen the pain. 4. The absence of any very marked loss of power (except in extreme cases), ataxia, or mental symptoms. 5. The association of œdema in some cases and not in others. 6. The peculiarity of the pigmentation, its varied intensity, and its distribution, fading towards parts most exposed to the air or subject to the least pressure. 7. The dryness and desquamation of the skin of the trunk, in some cases branny in character, in others exfoliating in flakes, the flakes of epidermis being white, indicating a deposit of pigment in the deeper layers of the cutis. The peculiar condition of the nails, which were occasionally raised up and loose; in one case the nails on the fingers presented a well-marked transverse ridge, indicating the approximate date of the initial trophic disturbance. 8. The occurrence of skin eruptions; in two cases intercostal herpes zoster, in another herpes of the buttock and extending to the knee; in one case a patch of erythema on the back nine inches square, with dermographia; in one case large patches of urticaria were present all over the body, with the exception of the hands, feet, and scalp; these were raised above the skin level from one-sixth of an inch to three-eighths of an inch and varied in size from one inch to eight inches in the greatest diameter. 9. In one case, that of a woman in whom the general symptoms were pronounced, there were both laryngitis and bronchitis present, also a rapid enlargement of a previously small and quiescent goitre. 10. In only one instance was Dr. Buchanan successful in detecting arsenic in the urine to his satisfaction. The case was a severe one under the care of Mr. H. W. Nott of Little Sutton. No difficulty was found in obtaining characteristic reaction by Reinsch's method and subsequent sublimation from six ounces of distilled water to which had been added a quarter of a drop of liquor arsenicalis, B.P. The rapid enlargement of the thyroid gland which occurred in one of the cases suggested the possibility that the peculiar condition of the skin, the falling hair, and the pigmentation might be due to the arsenic in a direct or indirect way affecting the thyroid gland and perhaps the suprarenal glands. Relative to this suggestion Dr. Buchanan offered the following points for consideration. (*a*) At a meeting of the institution held on Oct. 17th, 1895, in the discussion which followed an admirable paper on Exophthalmic Goitre by Dr. J. H. Abram, Dr. Buchanan related a case in which, during a quiescent period of the disease, the exhibition of liquor arsenicalis in doses of three minims three times a day, with the hope of diminishing the anæmia, was followed within 48 hours by great prostration with inability of the patient to stand alone

and an aggravation of all symptoms. The drug was immediately withheld. 11 weeks later it was again tried with a similar, but not so severe, result. Several recorded cases in the *Manchester Medical Chronicle* pointed to the aggravation of the symptoms on administering arsenic. More recently arsenic had been suggested and used with variable result, in conjunction with the administration of thyroid gland, to prevent symptoms of thyroidism. Although these observations seemed diametrically opposite they tended, at least, to show that arsenic, in a manner the *rationale* of which is not fully known, might probably exercise an influence on the thyroid gland. (*b*) The close association of pigmentation, localised or diffuse, in patients suffering from "Graves's disease." (*c*) The association of pigmentation with latent thyroidism. (*d*) The pigmentation of gestation, during which period the thyroid gland was enlarged and more active. (*e*) The characters of the skin in myxœdema and hypothyroidism. (*f*) The increased frequency of the pulse and tremor in arsenical poisoning and Graves's disease. (*g*) The number of cases of arsenical poisoning had been greater and the symptoms more pronounced in women (in whom affections of the thyroid gland were more common than in men). (*h*) The presence of iodine as a normal constituent of the thyroid gland; the prevention of pigmentation during the administration of arsenic by the use of iodine at the same time. Referring to the presence of arsenic in beer Dr. Buchanan drew attention to the possibility of contamination occurring in the following ways. 1. The use of sulphuric acid containing arsenic as an impurity in the "converters" in the manufacture of glucose, or at a later stage if used as a bleaching agent in the "vacuum pan." The same might apply to the inversion of Jaggery sugar. 2. Bisulphite of lime containing arsenic as an impurity, if used for the washing out of brewing vats or "cleaning casks," or washing the beer barrels after "steaming," or as a "fining." 3. The use of sulphuric acid to cut the isinglass in the preparation of "finings." 4. The possible contamination of grain by the use of artificial manures containing arsenic. In the manufacture of glucose lime was used to neutralise the sulphuric acid in the liquor from the "converter"; after neutralisation it was passed through press-bag filters and the residue was used as manure. 5. The possible contamination of hops if bleached by the use of bar sulphur. 6. Contamination of the malt by the use of anthracite coal in the kiln or by sulphur. Dr. Buchanan drew attention to the use of lime for cleansing purposes and the possible combination with it of lactic and malic acids in the beer. Decomposition of these substances if brought about by the action of certain organisms would result in the evolution of nascent hydrogen which, combined with the arsenic to form arseniuretted hydrogen, one of the most poisonous forms of arsenic. If lime and soda were used for cleansing barrels, &c., a combination of arsenic and soda might take place and produce an easily absorbable compound. If so it might account for cases in which the symptoms were sudden and severe, especially as beer was so often taken on an empty stomach, facilitating rapid absorption. The production of arseniuretted hydrogen in a somewhat similar manner had been shown to occur and had been put forward as a means of poisoning from arsenical wall-papers. Dr. Buchanan exhibited a series of plans illustrating the construction of a complete maize milling plant for manufacturing pure degermed meal, maize oil, and cake; also of plant and machinery for the manufacture of white liquid glucose with a capacity of 70 tons per day. A concise description of the process of manufacture and a "key" to the plans were also provided.

Dr. F. H. BARENDT divided the eruptions present in arsenical neuritis into two classes: (1) after heavy drinking, and (2) after moderate drinking. Under the first class erythromelalgia, erythema of the face, urticaria, and hyperidrosis were observed. Under the second class zona, palmar and plantar keratosis, and pigmentation were observed. The diagnostic differences between arsenical pigmentation and Addison's disease were fully described. The pigmentation in these cases, which had been noted by writers on drug eruptions, was physiological and not due to any deposit of arsenic in the skin, in contrast to argyria, where the presence of the silver had been detected in the tissues. It had been overlooked or mistaken for morbus Addisonii and phtheirisis.

Dr. GLYNN had met with cases of arsenical neuritis with the pigmentation and eruptions described by the previous speakers and would not refer to them. He had seen a woman who after a few glasses of beer was attacked with neuritis; the affection commenced with sore-throat, diarrhœa, and general œdema early in October, and although no beer had been taken since the onset of the disorder the symptoms of neuritis had up to the present time become aggravated. The amount of arsenic in the beer consumed was about one-seventh of a grain to a pint. She had taken iodide of potassium from the first without benefit; from his experience in this and other cases he concluded that this drug was of no value in arsenical neuritis. He was not prepared to accept Dr. Reynolds's theory that alcoholic neuritis was invariably due to arsenical beer, as he believed that he had met with the disease in women who were spirit-drinkers and took no beer.

Dr. W. CARTER thought that some startling revelation of this kind would alone rouse the country to the dangers and anomalies of the public traffic in alcohol. In 1837 when it was found that there were 6·5 deaths per 1,000,000 of the population from arsenic a popular clamour was excited, issuing in an Act of Parliament which fenced its sale with restrictions, the effect being that in 1897 the mortality had fallen to 4 per 1,000,000 in a population of 30,000,000. In the years 1576 to 1880 the Registrar-General's returns showed an annual mortality from the *direct* effect of alcohol of 38·4 per 1,000 000, but no alarm being felt and no Act being obtained for restricting the sale of this poison it had risen in 1897 to 77 per 1,000,000. Dr. Tattersall had published returns which showed an extraordinary decline in the death-rate of Salford owing, as he believed, to the abstinence from beer-drinking during the last week or two in that town. The present scare would soon die away and adulteration probably be again practised unless some method of permanently securing the public interests was enforced. If men would not abstain altogether they should at least have a drink free from poison, and much good could be done by medical men as well as by others by supporting the recommendation of the Brewers' Commission as to the necessity of analyses. But these analyses should be periodical—say, quarterly; they should be made at the brewers' expense and should be accompanied by a certificate of purity which the licensee of the public-houses should be bound to expose in a conspicuous place so that everyone entering the house might see it; or Sir Cuthbert Quilter's Pure Beer Bill should be passed. Such glaring anomalies as prevented the holders of the railway stock of the London and North-Western or Midland Railway from sitting as justices on a licensing bench because of the infinitely small interest they had in the companies' hotels, while permitting the directors or chairmen of companies of glucose manufacturers that supplied brewers all over the Kingdom and had a direct interest in promoting the sale of beer, ought to be abolished. As for the traces of arsenic that could get into barley from soil or into beer from bacteria they might be disregarded. What was wanted was a periodical analysis by competent chemists that would insure the public against injurious additions, whencesoever they might come.

Dr. E. W. HOPE, in referring to the administrative aspects of the question, said that as soon as the cause of the neuritis was suspected it appeared to him that the first and obvious duty was to remove all arsenical beer from the possibilities of consumption. The first step was to ascertain which of the brews were likely to be poisoned and where the contaminated beer was being sold. The solicitor to the Brewers' Association was requested to call a meeting of the association forthwith, and in the meantime samples of beer were purchased in various parts of the city for a qualitative analysis, only to determine whether or not arsenic was present, irrespectively of quantity. The brewers placed themselves unreservedly in the hands of the health department and decided to destroy any beer which might reasonably be suspected of contamination. The Food and Drugs Act, on account of its slowness of action and from the fact that proceedings would lie against the retailer or licensee of the public-house and not against the brewer, was not considered a good weapon to cope with the poisoning. The Public Health Act, by which the medical officer of health or his representative was empowered to seize any article of food which was unfit for consumption and which was exposed or deposited for sale, was the weapon actually put into force. Before this Act could be put into force it would be necessary to have reasonable grounds for the belief that each barrel seized contained arsenic. So far as the brewers were concerned the poisoning

was accidental and no guilty knowledge could be proved against the retailers as would be required by the Food and Drugs Act. Quantities of beer were turned into the sewers, being seized as the result of the analyses which came to hand. The official records showed that 181,000 gallons were destroyed in Liverpool alone, besides large quantities of which there was no official record. As regards the results of analyses, no arsenic was reported in any samples taken in the ordinary way during October, and when the specific search was made for arsenic the quantities per gallon varied widely, from one and a half grains per gallon to a trace, one-fifth of a grain. Sugar was accountable for the worst class; accidental contamination might explain the other, and one not improbable explanation of this class was that the holds of vessels used for the carriage of pyrites in bulk had subsequently been used for the transport of grain in bulk. The use of flats and lighters in a similar way might also suggest a similar source of contamination. Alcoholic poisoning in Liverpool was very common, inquests being held upon scores of men and women whose deaths were ascribed by the juries to alcoholic poisoning. So usual was this that no one remarked it, but the accidental addition of a new poisonous ingredient, to which perhaps half a dozen deaths had been partially due, aroused attention. He suggested the appointment of a committee to consider what steps could be taken to prevent the recurrence of such an incident.

Dr. LESLIE ROBERTS said that the cutaneous symptoms in the present epidemic could be conveniently arranged into two natural groups—viz., (1) the chronic vaso-motor group and (2) the nutritive group. The former group included the phenomena of cyanosis, paresis of the peripheral vessels, especially well seen in the face and the main furrows of the palms, and the fixed erythemata of the palms and soles. This type of erythema, called "erythromelalgia," was associated with pronounced hyperidrosis and usually with distinct evidence of sensory and motor neuritis. It constituted the "pink palm" of a past generation. The nutritive changes were (1) pigmentation, (2) exfoliation, and (3) keratosis. The pigmentation was a physiological melanoderma. The exfoliation was comparable to that which takes place in the case of a frog poisoned with arsenic—viz., the separation of the horny cuticle from the underlying epithelium. The effects of arsenic were marked in the palms, which acquired an aspect like wet shagreen; the furrows were coarse and exaggerated and presented a brownish-red colour. To the touch the palm felt uneven and lumpy from the presence of solid nodules with a shining, flat-topped aspect. In cases where hyperidrosis and nerve symptoms were less marked the palms showed signs of black keratosis in circular patches, tending to fuse into larger patches. The nails were usually affected, the matrix being thickened and the nail discoloured.

Dr. W. A. NEWALL (Chester) remarked upon the sudden incidence of the cases in Chester, from one or two during eight months to 15 in two weeks. The rapid onset of the symptoms and their great similarity—viz., pain in the feet, numbness of the feet, legs, and hands, acute tenderness of the calf muscles, rapid severe paralysis of the legs followed by atrophy, œdema of various degrees, and dilatation and irritability of the heart—these symptoms occurring absolutely alone in the first 20 or 25 cases. Dr. Newall wished to know if it were possible to have a condition of arsenical intoxication of such severity as to cause severe and rapid paralysis and very marked sensory phenomena without vomiting, diarrhœa, colic, inflammatory skin-lesions, pigmentation, or tremor? If this were possible the cases occurring in Chester might be due to arsenical poisoning; if not, that poison could not be the cause.

Dr. PRYTHERCH claimed that there was strong evidence of the epidemic in Chester being one of beri-beri, and said that he was supported in this view by Major Ronald Ross, I.M.S., who had seen these cases. If these cases were due to arsenical poisoning it was but fair to infer that the severity of the symptoms should have some relation to the amount of beer consumed. He did not find such relation, even total abstainers being affected. It had been stated that traces of arsenic had been found in but 14 per cent. of even acute cases. That did not warrant the conclusion that the epidemic was due to arsenic, nor did it follow that the finding of arsenic in urine was a proof of arsenical poisoning. Œdema, which was a constant feature of beri-beri, was present in all cases, and until the present epidemic this was not recognised as a symptom of arsenical poisoning. The same remark applied to the peculiar spacing of the heart-sounds. He quoted cases from his own experience which had been treated with large doses of arsenic, in some of which the patients had recovered and in the others they were improving; their beer was at stopped. He did not think that arsenic in the beer was the sole cause of the epidemic, but that there must become other more potent cause, and this when discovered might explain the etiology of beri-beri.

Dr. J. ERNEST NEVINS commented upon the amount of freckling found in these cases of arsenical neuritis. Amongst 14 cases in one ward under his care there were eight patients with freckles with or without other pigment, whilst in the next ward amongst 14 non-neurotic patients of similar ages and social conditions there were only four with freckles. The cases in the Liverpool parish hospital were fewer and of a milder type than were those at West Derby Hospital.

Dr. J. H. ABRAM said that the majority of the cases he had seen did not present any pigmentation. The paresis also was but slight, the inability to walk being due to excessive tenderness of the skin of the feet. The absence of characteristic skin lesions made the examination of the urine imperative, but owing to the rapid elimination by the kidney it was necessary to apply the tests as soon as the case came under notice. He thought that this might explain the failure to detect arsenic in the urine in some cases.

Dr. D. SMART stated that although he was a medical officer of a workhouse he was in the position of having had no arsenical cases under his care. He took it that the gastric symptoms, the eye lesion, and the pigmentation were the things to be looked for in arsenical neuritis, and although his cases had been seen by other physicians no one had found anything definite pointing to the arsenical origin in the seven cases of neuritis which he had under his care at Smithdown-road Workhouse.

Major ROSS, I.M.S., also spoke, and Dr. RAW and Dr. REYNOLDS replied.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

Nephrectomy.—Radical Cure of Femoral Hernia.

A MEETING of this section was held on Nov. 9th, 1900, Mr. THOMAS MYLES, the President, being in the chair.

Mr. FRANCIS HEUSTON brought forward a case of Nephrectomy for Sarcomatous Tumour of the Kidney. The patient was a woman, aged 24 years, who noticed a small painless swelling in her right side in the winter of 1898. In February, 1899, she had a severe attack of hæmaturia, lasting for three days, which then ceased and did not recur. From that time the tumour gradually increased in size, and in September its weight gave rise to a dragging pain in the side when she was in a vertical position. When seen by Mr. Heuston a large tumour occupied the right lumbar and umbilical regions, extending to the linea alba; above it passed beneath the costal arch and below to the level of the superior iliac spine. It was not attached to the skin and it moved freely within the abdominal cavity; it felt smooth, was of stony hardness, and had well-defined edges. Examination did not give rise to pain or tenderness. On Feb. 1st, 1900, the usual oblique incision for lumbar nephrectomy was made and the tumour was exposed, when it was evident that the growth was chiefly cystic. Some of the larger cysts were tapped by an aspirator needle, removing a clear watery fluid containing albumin but not urea. The pelvis of the kidney was greatly enlarged and was occupied by a firm growth which extended down the ureter to the position where it passed into the true pelvis over the iliac vessels. Here the thickening ceased abruptly, leaving an apparently normal ureter below this point. This was ligatured and the affected portion was dissected upwards to the kidney, separating the pelvis from the renal vessels, which were then ligatured; the whole tumour was then removed without difficulty, the peritoneal cavity not being opened into. The patient's recovery was rapid and uneventful, the only point of interest being an immediate increase in the amount of urine, which now averaged 40 ounces in 24 hours, as compared with 21 ounces before operation. The kidney weighed 20 ounces after it had been bisected and most of the fluid drained away. An increase in the quantity of urine was a well-known phenomenon after operation in cases where one kidney was diseased and functionally inactive for a long time and the

other kidney, being in a healthy condition, had had to do all the work. Whether that was due to the source of irritation being removed or to nervous reflex action had not yet, as far as he knew, been decided.

Mr. H. GRAY CROLY communicated a series of cases in which he performed the Radical Cure of Femoral Hernia by the displacement method originally introduced by Kocher of Berne.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—A meeting of this society was held on Dec. 14th, Dr. Symes Thompson in the chair in the absence of the President.—A paper on the Suppression of Malaria was read by Dr. Arthur Waddell. After traversing the etiology of the disease and the different methods for its mitigation and suppression he concluded by saying that "methylene blue and non-poisonous larvicides, a minute hydraulic survey of each district followed by the pumping engine, the covered drain, and the protected water area, are the hosts upon which we must rely to lead us to victory." After speaking of segregation and the practicability of the measures inculcated he concluded as follows: "Of the positive effect of the measures considered, where they can be intelligently applied, there can be no doubt. The only question remaining is that of economics. If a jury of business men were empanelled to adjudicate on this point the first question they would ask would be, 'Will it pay?' and the answer would come back triumphantly, 'Yes, pay many times over.' For the healthy energy of a country is the true index of its wealth and greatness, and where malaria is, are diminished health and subdued energy. But what, I ask, has the question of pounds and liras and lacs of rupees got to do with malaria suppression when the cause of humanity demands it? If a man's health, life, and happiness be placed in one scale of the balance against all the gold of the universe, the diamonds and precious stones of the mine, and the pearls of the sea, will it not weigh them all down? Economics must nevertheless have a certain say, for we must be just as well as generous. Nations must rise to their duty to the best of their ability and be ready to make big sacrifices in the good cause. Many things of the luxurious order can be dispensed with, one, not the least, some portion of the betinselled and hysterical militarism which absorbs so many energies. Ross's discovery has come as a fitting crown to a century already glorious in its ending. Let us hope that the new century will master the problem which is thus unfolded and that in rising to grapple with it our beneficent British empire, great in the ownership of malarial territory as she is in many virtues, must lead the van."—Letters of regret at unavoidable absence were read, amongst others, from Surgeon-General H. S. Muir, Colonel Johnston and Major W. G. Macpherson of the Army Medical Service, Professor McLeod of Netley, Major R. Ross, I.M.S., Dr. H. E. Annett of Liverpool, &c. Major Ross in a letter to the lecturer said: "My view on prevention of malaria is that our principal malarious towns should be kept as well drained as possible and that municipalities should keep mosquito-killers; also that Governments should issue instructions to their sanitary officials to take steps in these directions." Dr. Annett, a member of the Liverpool malaria expedition, wired: "Cannot too strongly urge segregation of Europeans and efficient surface drainage as only measures against malaria in West Africa. Quinine, mosquito-proof houses, &c., absolutely impracticable."—An interesting discussion followed the reading of the paper in which the chairman, Surgeon-Major Black, Dr. Fortescue Fox and Mr. Tregelles Fox (Strathpeffer), Dr. L. J. Hobson (Harrogate), Dr. Morgan Dockrell, and others took part.—Mr. Ernest E. Austen of the British Museum and a member of the Liverpool West African expedition, in alluding to some of his experiences expressed the fear that in Sierra Leone, at all events, there could not be much hope of inducing the negro population to act up to the standard, fearing that there was no possibility of educating them sufficiently on the subject.—Dr. R. W. Felkin showed a Mosquito Net which he, Gordon Pasha, and Emin Pasha had used in 1878.—Dr. Waddell, in reply, expressed confidence in the civilising force of educated control against any native inertia where caste was not concerned, and in reply to Mr. Tregelles Fox's query as to where the special parasite had been in the ages pointed out the enormous duration of man in the world, amounting probably to a quarter of a million of years, and that the origin of the human forms of the sporozoa was to be found in the ordinary process of specialisation through evolution.

WINDSOR AND DISTRICT MEDICAL SOCIETY.—The third meeting of the session of this society was held at the Guildhall, Windsor, on Dec. 19th, Mr. W. B. Holderness, the President, being in the chair.—Dr. E. B. Hulbert showed (by kind permission of Mr. J. R. Lunn of St. Marylebone Infirmary) the following:—1. A Heart affected with Ulcerative Endocarditis. 2 Drawings and Photographs of Uncommon Diseases, including myxœdema, cretinism, cancer of the male breast in a patient aged 91 years, foreign body in the female bladder, anæsthesia following herpes zoster, sebaceous cyst of the buttock, malignant disease of the tongue, hare-lip, goitre, &c.—Mr. Arnold Thomson showed a case of well-marked Mitral Regurgitation in a man who had never had any illness and considered himself strong and well.—Dr. H. B. Milsome showed a patient with Narrowing of the Left Palpebral Cleft and Dilatation of the Left Pupil. There was a swelling in the neck which it was suggested was pressing on the cervical sympathetic.—The President showed a patient who was able to demonstrate a Perforated Membrana Tympani by passing air very audibly by Valsalva's method.—Dr. G. E. Hale showed: (1) A case of Chronic Epididymitis associated with Hydrocele; and (2) a patient with a Fibroma of the Arm causing anæsthesia of the fingers by pressure on the median nerve.—Dr. G. Leslie Eastes read a paper on the Histology of the Urinary Tract in Relationship to Morbid Urinary Deposits, giving a lucid description of the epithelial lining of the urinary tract from the cortex of the kidney to the meatus urinarius. Illustrations carefully drawn to scale were exhibited, showing the various appearances presented by the cells in microscopical preparations of urine.—Dr. E. S. Norris introduced a discussion on the question as to whether excessive athletic exercises in the young were productive of any ulterior bad effects. After quoting some statistics from the late Dr. Morgan's book, "University Oars," which certainly did not appear to show that rowing tended to shorten life, he gave personal testimony to the hard work entailed by boat-racing. In the course of his experience, however, he had only seen one case in which it appeared to him that ill-effects had certainly followed, but it was, he admitted, no uncommon thing for other physicians to see these young oarsmen and curtail their athletic exercises and prescribe a course of treatment for dilatation of the heart.—The discussion was continued by Dr. W. A. Ellison who said that he had systematically examined the boys rowing in the Eton crews for the last eight or nine years and to a certain extent for the last 16 years. After pointing out that most of the cases where ill-effects were supposed to have ensued as a result of the university boat-race broke down on a closer examination, he expressed the opinion that provided a young man had a perfectly sound heart and was otherwise in good health boat-racing with training would do him no harm, but if he were out of sorts or in any way in bad health it would do him an injury. He further pointed out that the heart of a young man who had indulged in boat-racing showed some hypertrophy which was in his opinion quite a normal and salutary result.—On the motion of the President the discussion was adjourned till the next meeting.

MIDLAND MEDICAL SOCIETY.—The third ordinary meeting of this society was held on Dec. 12th at the Birmingham Medical Institute, Mr. Jordan Lloyd, the President, being in the chair.—Mr. H. G. Barling showed a male patient, aged 19 years, who received a Blow from a Railway Buffer on Sept. 20th, 1900. The shock was moderate and was followed by slight symptoms of peritonitis and by a steadily increasing accumulation of fluid in the abdomen, associated with jaundice, occasional vomiting, and at the end of a few days some diarrhœa, the stools containing a lot of bright green biliary colouring matter. The abdomen was opened at the lower part on the thirteenth day and about six pints of what appeared to be pure bile were collected, a large quantity in addition escaping; there was no trace of blood seen. The discharge from the incision ceased in three or four days and no further abdominal mischief ensued, but a left pleural effusion followed, and eventually about 70 ounces of bile-stained but not purulent fluid were removed by aspiration. Rupture of the gall-bladder was inferred, rather than rupture of the liver or ducts, because no hæmorrhage was found in the abdomen, which would pretty certainly have been the case had the liver been torn; further, it was difficult to see how rupture of the ducts should occur without injury to the liver substance.—Mr. Barling also showed a large single Gall-stone

removed from a woman who suffered from attacks of pain in the epigastrium and in the back but without vomiting or jaundice. The interest of the case lay in the fact that a moveable lump could be felt in the abdomen below the liver, the mobility being so free that the mass could be displaced downwards several inches. The explanation of this lay in the very much elongated gall-bladder, the distal end of which could be brought three inches out of the abdominal incision; it contained only the one stone.—Mr. Barling also showed the Liver, Bile-ducts, and Duodenum of a patient from whom he had removed a gall-stone impacted in the common duct close to the duodenal opening. Two operations were performed at an interval of one month. The patient did well for four days, when leaking from the duodenum began which was followed by rapid loss of strength, and the patient died on the seventh day after the second operation. The necropsy showed no general peritonitis, but a cavity contained material which had escaped from an opening in the duodenum about three-quarters of an inch in diameter.—Dr. O. J. Kauffmann showed two cases illustrating the results of Meningitis.—Dr. Douglas Stanley showed a patient, aged 52 years, who had marked Rhythmical Movements of the Right Arm and Leg. His occupation was that of sorting scrap iron. He had had no important illness and there was no history of syphilis. The movements had been present for two years, having begun in the right arm and then appearing in the right leg and foot. The diagnosis as to the case being a form of choreic affliction or one of paralysis agitans was discussed.—Mr. Smallwood Savage read a note on a case of Complete Rupture of the Uterus and Vagina successfully treated by drainage and suture.—Dr. W. Lamb read a paper on the Diagnosis of Nasal Obstruction.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on Dec. 19th, 1900, Dr. Robert Jardine, the President, being in the chair.—Dr. A. W. Russell showed a Fœtus with Hydrocephalus and Spina Bifida. He also read notes regarding the Dilatation of the Cervix and showed a set of dilators where the different sizes were more exactly graduated than was generally the case.—Dr. Bell Todd showed:—1. Two Calculi which had been passed by a patient who had some years previously suffered from renal colic. She was pregnant a few months at the time the calculi were passed. Abortion followed 10 days later. The pain was in the left groin and thigh, so presumably the calculi came from the left kidney. A point of interest was that after the second confinement the abortion was her third pregnancy, Dr. Todd diagnosed a left floating kidney. 2. A Large Calculus removed through the interior vaginal wall.—Dr. Munro Kerr read notes of a case of "Missed Abortion." The woman had amenorrhœa for about four and a half months. Then a little discharge began to escape from the vagina. This occurred at frequent intervals for four months, when she was sent to him by her medical attendant. A diagnosis of "missed abortion" was made. The uterus being dilated, the shrivelled-up fœtus, with placenta and membranes entire, was removed. The fœtus seemed to be of about the age of four months.—Dr. Balfour Marshall read notes of a case of Missed Abortion where there was prolonged amenorrhœa with the retention of the ovum for a period probably of 12 months, but undoubtedly for at least five months, until removed by operation. The woman suffered from attacks of pain in the lower part of the abdomen, as if the uterus was from time to time trying to expel its contents. Great rigidity of the cervix existed, so that incisions had to be made into it before the ovum could be removed. In Dr. Marshall's opinion that might have in part been the cause of the retention of the dead ovum.—The President also read notes of a case of "Missed Abortion." In this case the woman had a slight hæmorrhagic discharge when she was about five months pregnant. A few days' rest stopped the bleeding and she had no other symptoms until full time when labour pains came on spontaneously and a five months' fœtus was expelled. The placenta was adherent and had to be removed manually. The President discussed the question of interfering when the diagnosis of death of the fœtus was made, and gave it as his opinion that provided there was no disturbing symptom the case was best left alone and labour allowed to come on spontaneously.—From this opinion Dr. Kerr dissented and considered it most desirable to empty the uterus whenever the death of the fœtus was diagnosed with certainty.

CHELSEA CLINICAL SOCIETY.—A meeting of this society was held at the Jenner Institute of Preventive Medicine, Chelsea-embankment, on Dec. 18th, Dr. William Ewart, the President, being in the chair.—Dr. F. T. Hewlett read a paper on Malta Fever. After welcoming the society to the institute and paying a tribute to the memory of the late Surgeon-Captain Hughes Dr. Hewlett reviewed the main features of the disease. He remarked that Malta fever had now been met with in all parts of the world and it was not improbable that cases would be seen among the troops returning from South Africa. He drew attention to the undulant character of the temperature curve and to the nervous and arthritic symptoms. The pathology was next discussed and the micrococcus Melitensis was described. The differential diagnosis and the value of the agglutination test were mentioned and the treatment was indicated. The paper was illustrated by lantern slides, microscopical preparations, and cultures, the agglutination reaction being demonstrated.—A discussion followed in which the President, Dr. C. A. Morris, and two visitors, Mr. Green and Mr. Rowland, took part. As to the treatment of Malta fever the consensus of opinion tended towards the pursuing of a strengthening dietetic course. No specific was known that had the slightest effect on the course of the disease. Quinine in any quantity beyond tonic doses was, if anything, harmful, and so far all attempts at producing an anti-serum had been fruitless. In the course of his remarks Dr. Ewart referred to the connexion between certain rheumatoid symptoms and toxæmia resulting from dental and oral suppuration. The point arose in connexion with the quasi-rheumatic characteristic often presented by Malta fever and was an instructive one as illustrating the fallacy of regarding all joint pains of a rheumatic semblance as being symptomatic of true rheumatism.—A unanimous vote of thanks to Dr. Hewlett for his paper and for the hospitality accorded to the society at the Jenner Institute terminated the meeting.

GLASGOW SOUTHERN MEDICAL SOCIETY.—A meeting of this society was held on Dec. 27th, Dr. William Watson, the President, being in the chair.—The special committee appointed at a former meeting to consider the question of the abuse of hospitals and dispensaries laid their report before the society. After some discussion the following recommendation on the subject was approved:—

That in addition to any other method at present in existence or under consideration by the directors of such hospitals patients desiring treatment at the outdoor dispensaries should obtain a printed form containing a declaration that his or her circumstances are such as warrant gratuitous treatment; and that this form be signed by the patient and by either a subscriber, clergyman, missionary, or justice of the peace, or be accompanied by a doctor's card or line of recommendation.

Reviews and Notices of Books.

Cancer of the Stomach: a Clinical Study. By WILLIAM OSLER, M.D., F.R.S., F.R.C.P. Lond., and THOMAS MCCRAE, M.B. Tor., L.R.C.P. Lond., of the Johns Hopkins Hospital, Baltimore. London: H. K. Lewis. Royal 8vo. 1900. Pp. 157. Price 6s.

THE presence of the name of Professor Osler on the title-page of any book is in itself sufficient to command attention for the work and a close examination of the volume before us has fully justified the expectations to which his name gave rise. We have in recent years heard much of the operative treatment of malignant disease of the stomach, and especially in the beginning of 1900 Professor Mayo Robson put before us the very latest views as to the surgery of this affection, but so far as we are aware very little has been lately done to give a general view of the present state of our knowledge as to the symptomatology and diagnosis of this disease. We therefore cordially welcome the appearance of this work, especially as it comes from the pen of so eminent a clinician. The statistics and descriptions in this volume are based chiefly on a series of 150 cases of primary carcinoma of the stomach at the Johns Hopkins Hospital.

In the opening chapter we find a very full discussion of

the important question of the alleged increase of malignant disease, and the authors arrive at the conclusion that the increase is real but that the returns at present available do not justify a positive conclusion that there has been any special increase of cancer of the stomach. The importance of heredity in the etiology of malignant disease is held nowadays in much less estimation than was the case only a few years ago, and it is interesting to note that of the cases on which the descriptions in this volume are based in none of the 23 cases occurring before the age of 40 years was there any family history of cancer. It appears also that the influence of previous disease of the stomach such as chronic dyspepsia and gastritis is not of much moment in the production of malignant disease of that organ.

About 6 per cent. of the authors' cases occurred before 30 years of age, and from all sources six cases have been recorded in patients under 10 years of age, the youngest being only 40 days old at death. In fact, there have been recorded in all 19 cases of cancer of the stomach in patients under 20 years of age. On the whole, in the young the course is more rapid than in the old.

With regard to the symptoms the authors have come to the conclusion that the presence or absence of vomiting is not necessarily connected with the presence or absence of ulceration. And of the cases with vomiting only a little more than 28 per cent. had any hæmatemesis. In 26 of the cases the appetite was normal and in two of the cases the appetite was markedly increased. In 87 cases some of the contents of the stomach were obtained for examination, and of those 80 cases showed a complete absence of hydrochloric acid, but in seven it was present, so that this acid may certainly be present and yet there may be a malignant growth of the stomach. The authors consider that the microscopical examination is of considerable importance not only in the fresh but also in stained specimens.

Perforation occurred in 4 per cent. of the present series, and in half of these a localised abscess developed and in one case a communication formed with the cavity of the duodenum and the colon. Metastatic growths by no means rarely form at the umbilicus and two instances of this occurred in the authors' series. Multiple thrombi have been described in some cases of malignant disease of the stomach, and five were met with in this series, and in one case thrombi were present in 14 different veins. A very excellent chapter is that devoted to the study of the tumour itself, and a tumour could be felt in more than 75 per cent. of the cases. In 12 of the cases an atrophic cancerous stomach was present, and in half of these the signs were sufficiently well marked to enable it to be diagnosed during life. It is decidedly rare to find cancer of the stomach in persons dying by accident, but latent cases do occur, and in this series there were eight such cases in which there were no symptoms of a malignant growth.

The first essential in the treatment of carcinoma of the stomach is early diagnosis, for, as has been pointed out by Czerny and Rindfleisch, the presence of a palpable tumour is in itself a contra-indication to radical operation, and though it is to surgery that we must look for even the possibility of complete removal of the disease, yet the medical treatment is by no means unimportant and is in some cases the only treatment which is available. Great attention should be paid to the diet, and on the whole carbohydrates are not desirable as they ferment so very easily. The value of lavage is insisted on, and the authors say that they have never seen any harm result from its use even though ulceration was present. They recommend that it is best employed at night, especially if the patient has "disturbed nights from pain."

Exploratory incisions are advised, but it is rightly urged that they should not be undertaken merely as a diagnostic measure in the case of a patient who is run down and anæmic. As a general rule, the authors tell us, the patients have stood operative interference worse than their general condition would have led them to anticipate, and after operation the impaired powers of digestion may be enough to turn the scale in the wrong direction.

We had marked many other passages for notice, but what we have said is sufficient to show that the work contains a very valuable account of an important affection, and we think there is not a member of the profession who will not derive both pleasure and profit from a perusal of its pages.

The Thompson-Yates Laboratories Report. Edited by RUBERT BOYCE and C. S. SHERRINGTON. Vol. I., Reprints, 1898–1899. Vol. II., Reprints and Reports, 1898–1899. With Illustrations and Plates. Liverpool: At the University Press. 1900.

MOST excellent work has been accomplished in the Thompson-Yates Laboratories at Liverpool and we welcome the appearance of the first two volumes of reports; subsequent numbers are to be issued half-yearly or oftener if sufficient material is ready for publication. They are intended to promote learning and to record research in the various branches of physiology and pathology and thus to carry out the wishes of the founder of these schools. The volumes are edited by Professor Rubert Boyce and Professor C. S. Sherrington, and under such able leadership we have no doubt but that a large amount of valuable material will be published which would otherwise escape the notice which it deserves. Volume I. contains the account of the opening of the laboratories in October, 1898, by Lord Lister who was accompanied on that occasion by Professor Virchow and a distinguished gathering of scientific and representative men. An address delivered before the medical students of University College by the founder of the laboratories, the Rev. S. A. Thompson-Yates, is also published.

The first volume also contains numerous papers and reports on Neurology, Bacteriology, Hygiene, and Morbid Anatomy, also reports on Physiology and Tropical Medicine. Professor C. S. Sherrington contributes articles under the titles of "On the Spinal Animal," "Synopsis in the Peripheral Distribution of some Spinal Nerves," and "On the Innervation of Antagonistic Muscles (Sixth Note)." The second named is a most valuable paper reprinted from the Philosophical Transactions of the Royal Society of London and contains the results of an immense amount of useful research. Dr. W. B. Warrington is responsible for several papers on matters connected with Neurology either alone or in conjunction with Professor Boyce or Dr. E. E. Laslett. Dr. C. Balfour Stewart contributes three Papers on "Haffkine's Plague Prophylactic." Amongst the other contributors are Dr. J. H. Abram and Dr. E. P. Manby.

The second volume contains papers and reports on the same subjects and the reports of the Malarial Expedition to West Africa. One of the most interesting papers is that on "Oysters and Disease," by Dr. W. A. Herdman and Professor Rubert Boyce. It is evident from the result of their experiments and a consideration of all the facts brought to light in recent years in regard to the bacteriology of shellfish and its influence on public health that we must regard oysters, mussels, cockles, and the like, as nutritious food matters, which, from their nature and the circumstances of their cultivation and sale, are liable to become contaminated with organisms—pathogenic or otherwise—and their deleterious products. As the authors point out, when this is once recognised the practical applications are largely a matter of common-sense. Shell-fish must not be taken as food from grounds where there is any possibility of sewage contamination. The fresher they are from the sea the more healthy they are likely to be, and they sh uld

be continually protected after gathering from any possibility of insanitary environment. Only absolutely fresh shell-fish should be eaten uncooked, and those that are cooked must be sufficiently so, being raised to boiling-point and kept there for at least ten minutes.

The publication of these volumes is a decided gain to medical literature and the editors may be congratulated on the success of their efforts.

A Text-book of Pathology in Relation to Mental Diseases. By W. FORD ROBERTSON, M.D. Edin., Pathologist to the Scottish Asylums. Illustrated with 16 lithographic plates and 13 engravings. Edinburgh: William F. Clay. 1900. Royal 8vo. Pp. 380. Price 21*s.* net.

THE need of a systematic work dealing with the pathological changes in the nervous system associated with mental diseases has been long felt. Too long had this department of medicine remained obscure and ill-explored until the foundations laid by the discoveries of Hitzig and Ferrier, Golgi and Ramon y Cajal, Meynert and Flechsig rendered the erection of a stable superstructure possible. In the long series of works which must precede the erection of a rational pathology of mental diseases the present work takes its place as a valuable collection of descriptive studies in pathological anatomy. It is perhaps unfortunate that the author was unavoidably prevented from including in the volume an account of "morbid changes affecting special parts of the nervous system," but this is explained in the preface as due to want of time. The various chapters deal with such matters as methods of post-mortem examination, including histology, morbid conditions of the scalp and ears, abnormalities of the skull, and the morbid conditions of the cerebral meninges, cortex, and blood-vessels. The histological methods given are concise and practical. An interesting description is given of the changes in the ear cartilages in hæmatoma auris. After a brief account of the methods of cranial measurement the morbid conditions of the cranial meninges are dealt with. The term "pia-arachnoid" is employed and a very clear account is given of the relations of this structure to the dura mater and to the cerebral convolutions. The formation of sub-dural false membranes and of pia-arachnoid opacities is clearly described. Dr. Robertson holds that the view of Mickle and Bevan Lewis, one generally accepted—that morbid adhesions of the membranes to the convolutions occur in general paralysis—is erroneous. After a description of the blood-vessels the neuroglia is studied with some minuteness. The account here tends to be diffuse and prolix, physiological and anatomical facts and theories being confusedly mingled, with the result that there is a want of lucidity. The morbid conditions of the nerve-cell are discussed under the headings of terminology, achromatic and chromatic substance, pigment, nucleus, pericellular, and endocellular reticula, classification and mode of connexion of nerve-cells, and this is followed by a brief discussion of the "neuron theory." In his anxiety to give the very latest views on this topic scant justice has been done to the classical researches of Nansen, His, and Forel who have done the most valuable and permanent work in this department. The morbid changes in nerve-cells consequent upon nerve-section, hyperthermia, and experimental anæmia are briefly touched upon, and short paragraphs are devoted to chromatolysis, intracellular degenerations, and myelinic changes in nerve-fibres. Many of the illustrations are taken from the standard works, such as those of Golgi, Lugaro, and others. The work concludes with chapters on brain-weights and the cranial circulation, a brief mention of congenital abnormalities and focal lesions of the brain, general paralysis, syphilitic insanity, alcoholic and epileptic insanity, and idiocy. The work is well printed, being very free from typographical errors, and is a valuable appendix to the library of asylum medical officers and pathologists.

A Cyclopedia of Practical Medicine and Surgery: A Concise Reference Book, Alphabetically Arranged. Compiled under the editorial supervision of GEORGE M. GOULD, M.D., and WALTER L. PYLE, M.D. London: Rebman, Limited. 1900. Large square 8vo. Pp. 1008. Price 42*s.*

THE wide range of medical science and the extraordinary copiousness of medical literature have long ago made epitomes of some kind an absolute necessity for those who desire to take a general view of the subject and to keep pace with modern progress. Many able writers have from time to time done good service in this direction, and of the "Cyclopedia" by Dr. Gould and Dr. Pyle it may be safely said that no treatise which has yet appeared excels theirs as an example of the happy medium between the brevity of a lexicon and the diffuseness which under some editors has made each article an exhaustive monograph and expanded the whole work into several volumes. The authors say in their preface that it has been their object to present in one handy volume, concisely and authoritatively, the more important facts in all branches of medicine and surgery that are of working value to the active practitioner. The task is one for which they were well qualified and for the carrying-out of which valuable experience must have been accumulated by Dr. Gould during the compilation of his monumental "Illustrated Dictionary of Medicine, Biology, and Allied Sciences" (now in its fifth edition). The attainments and professional position of the 74 contributors are a sufficient guarantee that the various subjects have been ably treated, an agreeable aspect of unity pervades the whole work, and it is unquestionable that the object described in the preface has been amply realised. In dealing with a large book of this kind, containing many hundreds of articles alphabetically arranged, it would be impossible on the present occasion to give anything like a general idea of the vast variety of information to be found within its pages, but a brief reference may be made to some of the more important paragraphs. Under letter A, for instance, the account of Abdominal Section covers five pages and gives a satisfactory description of the essentials of the antiseptic methods employed in general surgery, including the sterilisation of instruments and the preparation of the operator and his assistants. Under Alcoholism there are many useful suggestions for the treatment of this condition and delirium tremens. The articles on Amputation, Anæsthetics, and Aneurysm supply in each case a well-arranged and tolerably full *résumé* of the various subjects The more important of the other articles under letter A are Appendicitis, Arteries, and Auto-infection. Under letter C a few of the most interesting paragraphs are those on the preparation and preservation of the Cadaver, the selection and hygiene of Camps (five pages), Cataract, Catheter, Chancroid, Chest (six pages), Cholera, Chorea, Climatology (four pages), Coma (five pages), and Constipation (four pages). Articles longer than any of the foregoing will be found under the headings Brain, Poisoning, Spine, Tuberculosis, Tumours, Urethra, and Urine. We have noticed only one inaccuracy—namely, under the word Water, where balneum maris is explained to be a warm-water bath. Departures from the ordinary English orthography, such as might be expected in a book of American origin, are not numerous and consist for the most part in the substitution of "e" for "æ," and the suppression of the final "e" in "oxide," &c., together with the use of the words "chemic," "pathologic," and the divided "can not." We have not found any important omissions except that there does not appear to be any reference to

diseases of the teeth or dental operations. Perhaps these subjects have been intentionally left out, for the headings Dentition, Teeth in Diagnosis, and Toothache are in their proper places and in each case the description of the respective conditions is adequate. A column is devoted to "Carbon Dioxid," but "carbonic oxid," which is now a frequent ingredient of illuminating gas and seems to have been the cause of not a few fatal accidents, is only catalogued in the list of poisons. Under Malaria and Hemoglobinuria we might have expected to find the familiar phrase "blackwater fever," and there is apparently no mention of psilosis, sprue, or Guinea-worm, but these are minor matters and the line must be drawn somewhere, for no single volume of a size convenient for use could possibly be made to contain everything. In fact, it seems almost ungracious to call attention to these points in connexion with a book which we have looked through with so much satisfaction, and it only remains for us to express the conviction that the "Cyclopedia" will prove itself useful for reference and a valuable addition to the practitioner's library. Many of the articles are profusely illustrated and the typography is excellent.

The Morals of Suicide. By the Rev. J. GURNHILL, B.A. London: Longmans, Green, and Co. 1900. Pp. 227. Price 6*s*.

A THOUGHT which forces itself upon the attention of a reader of Mr. Gurnhill's book is "Who will be influenced by it?" The author is alarmed at the proportional increase of suicide in recent years and has in this book addressed himself to combat the tendency, no doubt with the most serious purpose. But why should suicides be amenable to his arguments? Especially does this consideration weigh when it is found that he excuses himself from dealing with the arguments of Pliny, Seneca, and others who have expressed approval of suicide under certain conditions on the ground that "we can scarcely be expected to form our conclusions from ancient classics or take as models for imitation the practices applauded in pagan religions. We have, or at least we believe we have, clearer and truer light to guide us" (p. 19). The position is a difficult one for a writer who wishes to persuade his readers of the error of their ways. And in truth Mr. Gurnhill is himself not quite unconscious of the difficulty. "Full well I know," says he, "that in many cases of suicide—perhaps the majority—neither the dictates of reason nor the precepts of philosophy or religion come into operation." But he thinks that "it is none the less true that the more a man is imbued with sound views as to the moral aspect of suicide the less likely is he in time of trial, temptation, and distress to have recourse to that deadly crime" (p. 71). This, then, is the view with which this book is written. It is a contribution to the task of forming a sound public opinion on a matter which, beyond all question, is a matter of great public concern.

We are not at all disposed to cavil with Mr. Gurnhill concerning the limitations which he chooses to impose upon himself in connexion with his task. If he thinks that he can better reach the section of society to which he addresses himself by refusing to discuss his position with those who do not accept the Athanasian creed we are quite prepared to take him at his own valuation, and, so far as in us lies, to recognise a serious effort to spread sound views of morals whether the area of operations be extended or circumscribed; and we perceive that Mr. Gurnhill has some notable qualifications for the task which he has undertaken. He is a scholar and is well read in the subject of which he treats. His scholarship, moreover, is of that literary order—much undervalued at the present day—which enables him to write with perspicuity and force, so that what he says is said pleasantly and to good purpose. But with all these qualifications for his task he has one capital defect. He deals with his subject in that meditative, uncritical—we had almost said absent-minded—style which is the besetting sin of clergymen and the vice of homiletic writing. In fact we have seldom seen so striking an example of want of thoroughness as is furnished by this book. Here is a volume of over 200 pages, devoted to the morals of suicide, written from the standpoint of a Christian clergyman who insists much, and naturally so, upon the example left by the Author of the Christian religion, and yet from cover to cover there is not a word about that awful problem—the duty that sometimes corners the true Christian and good citizen—of laying down his life. Suicide in this book means nothing but the petulant act of the disappointed man who rushes on his fate. The tragedy, the problem, the unselfish dread of becoming burdensome or of cankering a young life with the infirmity of an old one—these things do not exist for the author, who can speak of suicide only with horror as "this deadly sin" and is sanguine that it will become less rampant if the Christian churches can agree about the three creeds (p. 197). It is a disappointing book.

JOURNALS AND MAGAZINES.

The *Monthly Review* for January, 1901, is an excellent number, sustaining the reputation which Mr. Murray's sumptuous magazine has already won for itself. The two editorial contributions, "Unity and Uniformity" and "The Little Englander," will especially commend themselves to medical readers by their sanity and good temper. Our profession have much experience of the really ill-effect that the acerbity of politics has had upon the public health, and as an antidote we are able confidently to recommend the articles to which we refer. By reading them the party politician will learn to his surprise that "Imperial" does not mean everything that is hall-marked by the Carlton Club; that many of the proudest names in our history have regarded the perfecting of England as an admirable method of increasing the value of our rule and maintaining the respect of greater Britain as well as of foreign nations; and that no section or school of political thought has the monopoly of honesty, good intention, and patriotism.

The *Cornhill Magazine* for January, 1901, has an article from Dr. Conan Doyle's pen which shows the medical novelist in a very favourable light as a controversialist. The author of "The Great Boer War" in his valuable book criticised our military administration, as it came under his own eyes when serving with the South African Field Force, his criticism taking the shape of a short but thoughtful sketch of a method by which, it seemed to him, the military force of this country might be made more formidable without an increase of expense. His remarks entailed upon him some rather severe reflections from certain military experts, two of whom took up the position that military affairs should be left to military men—that, in fact, as Dr. Conan Doyle says, "civilian comments are of the nature of impertinence." With this contention, which is tantamount to a claim for the art of war that it is in every branch and twig an exact science, Dr. Conan Doyle makes short work. His rejoinder is studiously fair and polite, but he maintains his original position and in our non-military opinion, which may or may not be impertinent, there is so much to be said for Dr. Conan Doyle's scheme that we trust soon to hear of its endorsement, in part at any rate, by responsible persons.

The *Pall Mall Magazine* for January, 1901, starts under new editorship, but shows no falling away from the excellent position which it has won for itself. It is full of good things and capitally illustrated. The reproductions of the works of Rodin, the impressionist French sculptor, will

be of interest to anatomists. Mr. Winston Churchill's essay on the British officer is readable and reasonable. An article upon Flanders lace makes us regret the days when throughout the length and breadth of a large tract of England some of the finest lace in the world was made by the villagers. To the medical officer of health and the practical sanitarian, struggling with the evils of urban over-population, it must seem an extraordinary thing that such an industry, so pleasant, so well-paid, and not requiring of its operatives more than the most distant connexion with a market, should have been allowed to die out. Political economists can doubtless give a reason for this. We cannot; we can only regret the fact.

Analytical Records
FROM
THE LANCET LABORATORY.

(1) TABLOIDS, (a) BENZONAPHTHOL, (b) THREE SYRUPS AND (c) CALOMEL; (2) HYPODERMIC TABLOIDS; (3) OPHTHALMIC TABLOIDS; AND (4) SOLOIDS OF POTASSIUM PERMANGANATE.

(BURROUGHS, WELLCOME, AND CO., SNOW-HILL-BUILDINGS, E.C.)

BENZONAPHTHOL has recently been tried with some success as an intestinal antiseptic in fermentative dyspepsia, in typhoid fever, and dysentery. It is a true molecular compound of benzoic acid with beta-naphthol. It is insoluble in water and in acids but soluble in alkalies. It thus escapes decomposition in the stomach, but is resolved in the intestinal tract into benzoic acid and naphthol. The tabloid contains five grains of the derivative, which in this form is very convenient for administration. A combination of the well-known syrups—namely, Easton syrup, the compound syrup of hypophosphites, and the compound syrup of phosphate of iron—is represented in the tabloid called "Three Syrups." The equivalents of these are 15 minims of each of the first two syrups and 30 minims of the compound syrup of phosphate of iron. We have carefully examined chemically the constituents of this interesting combination and the presence of each and all was confirmed; the constituents were found preserved in the fresh state. This speaks well for the composition and probable efficiency of the tabloid, while it is needless to point out the advantage of this combination in the form of tabloid as compared with syrups. A useful tabloid also is that containing three grains of specially purified calomel. Euphthalmine has recently been introduced in ophthalmology as a favourable substitute for atropine. In the form of hydrochloride, present in the ophthalmic tabloid to the extent of one-fortieth of a grain, euphthalmine is said to produce when applied to the conjunctiva full dilatation of the pupil with but moderate disturbance of accommodation and no change in intra-ocular pressure. Its advantages are such that it appears to be especially suitable for ophthalmoscopic examinations. The tabloid dissolves immediately it is placed upon the conjunctiva. Amongst new additions to hypodermic tabloid products are morphine sulphate a quarter of a grain, and strychnine sulphate $\frac{1}{75}$th of a grain, a combination which has been used in phthisis with cough and cardiac weakness. These drugs have also been employed previously to administering an anæsthetic and are even stated to render less chloroform necessary, whilst the presence under these circumstances of the cardiac stimulant strychnine is considered an advantage. For hypodermic use also morphine sulphate has been combined with ergotinine citrate in the hypodermic tabloid in order to favourably modify the action of the hæmostatic. Lastly, a new soloid of potassium permanganate has been prepared containing one grain of the salt. It is useful for the preparation of a harmless antiseptic and disinfectant solution or for the ready preparation of an injection, lotion, or gargle.

(1) PEROXINE; (2) PEROXINE LOTION; AND (3) PEROXINE OINTMENT.

(THE NEW INDUSTRIAL REFINING CO., LIMITED, 8, PRINCES-STREET, E.C.)

These are all very interesting products, the active constituent of which is peroxide of hydrogen. Peroxine itself is a colourless liquid with an agreeable smell and is capable of yielding nearly twice its volume of oxygen. According to further analysis it contains nearly 1 per cent. of an essential oil which has become oxygenated during the course of manufacture. It is owing probably to the presence of this essential oil that the liquid is practically permanent in oxidising power and properties. Peroxine is intended for internal application. Apart from its marked antiseptic properties it is a real deodorant and cleansing agent. These properties render it useful in certain gastric and intestinal disorders, while it is said to have some oxygenating effect on the blood and thus to be beneficial in anæmia. Peroxine lotion is a stronger preparation, containing, according to our analysis, 5 per cent. of oxygenated essential oil and yielding nearly 10 times its volume of oxygen. It is curious to note the effect of oxygenating an oil, which makes it miscible with water. Thus peroxine lotion is a perfectly clear homogeneous fluid and yet contains 5 per cent. of an essential oil. On evaporating the lotion the oil commences to separate. Ether extracts the oil from the lotion and the oil may be recovered by allowing the ether to evaporate. It still possesses strong oxygenating powers, as is shown by its effect upon chromic acid, permanganate of potassium, &c., in the presence of water. The oil under these circumstances may possibly generate ozone. The lotion is permanent as regards its oxidising strength, owing, doubtless, to the preserving effect of the oil. It is suggested for external use for wounds, skin eruptions, &c., and as a healing application generally. It is a powerful deodorant and antiseptic and effective in cleaning or deodorising foul discharges. Peroxine ointment is a white unguent containing an oxygenated essential oil. The ointment basis is white vaseline. It is a very agreeable ointment to use, soothing and healing on account of its antiseptic and oxygenated properties. It is worth while pointing out that not the least important advantage of these preparations is that while they are powerfully antiseptic and deodorising they are non-poisonous.

VAN YSENDYK'S ROYAL NETHERLANDS COFFEE.

(ROTTERDAM. LONDON AGENCY: H. A. KRAMERS AND CO., 23, ROOD LANE, E.C.)

Undoubtedly the frequency with which coffee has been adulterated in the past is a factor which has rendered it less popular as a wholesome and agreeable stimulating beverage than it deserves to be. Even when the coffee is genuine its good qualities depend largely upon its method of manufacture and chiefly in regard to the way it is roasted. Finally, the preparation of coffee in England is not understood. The specimen before us is described as a new coffee. Whatever that may mean it is certainly good coffee and nothing but coffee. It possesses to a degree that peculiar fragrance which makes coffee attractive. It yields a very agreeable infusion, rich in the aromatic products obtained on roasting the berry, containing also a notable proportion of oils of coffee.

LERINA LIQUEUR.

(COVERDALE, POHLMANN, AND CO., 5, MARK-LANE, E.C.)

This is a liqueur said to be made by the monks of the Abbey of Our Lady of Lérins, Cannes, and is well known in the Riviera. The abbey, it is stated, dates from the fourth

century and "was a nursery of learned men, orators, and saints." Like other monastic liqueurs Lerina is a secret preparation, but we have found no constituent in it to which objection could be taken. It is a pale olive-green, syrupy liquid with peculiar delicate flavour. On analysis the liqueur gave the following results: alcohol—by weight 32·87 per cent., by volume 39·47 per cent., equal to proof spirit 69·16 per cent.; extractives and sugar, 33·45 per cent.; and mineral matter, 0·06 per cent. The liqueur has certainly an interesting and ancient history, and doubtless great care is directed towards its preparation and to the choice of its ingredients. Like most liqueurs containing the essential oils of plants or flowers it is an agreeable "digestive," acting as a carminative and producing a sense of comfort in the gastric centre after a meal.

IMPREGNATED WAX VESTAS.

(LONDON WAX VESTA CO., THE POINT, WANDSWORTH, S.W.)

We called attention in THE LANCET of Nov. 24th, 1900, to the danger arising from the ignited heads of wax vestas flying off on striking. Of course, a good deal depends upon the kind of rubber upon which the match is struck, but undoubtedly the tip is often at fault. It seems to us that it would be useless to offer a remedy in the shape of a rubber admirably adapted for the purpose because the public demand a match which will strike anywhere or on any surface without regard to its suitability for the purpose. Our remarks have been endorsed by the above company who have turned their attention to the preparation of matches which shall not lose their heads when struck. The resulting match is known as the impregnated wax vesta. We have tested a number of these matches by striking them on all sorts of surfaces and sometimes on fairly sharp points, or series of points, which, of course, is a severe ordeal. The impregnated vestas satisfied these tests and therefore their adoption, could it be universal, would largely, if not entirely, remove the objectionable and dangerous tendency of the red-hot heads to fly off in all directions on striking.

(1) "KUMOFF" AND (2) "NETTWAR."

(THE WALL-PAPER CLEANING SYNDICATE, LIMITED, 22, GLASSHOUSE-STREET, PICCADILLY-CIRCUS, W.)

The above are the names respectively of a wall-paper cleaner and a paint and varnish cleaner. "Kumoff" is a plastic substance resembling putty but reddish in colour and smelling distinctly of oil of cloves. Apparently it is a proteid substance akin to the gluten of wheat flour. It acts mechanically and after the manner of a piece of soft bread or dough in removing patches of grime from wall-paper or ceilings. "Kumoff," however, is far more effectual than bread or dough. It rapidly removes dirt and when carefully used transforms a blackened ceiling or paper to its original clean condition. "Kumoff" distinctly belongs to sanitary preparations: it works well and is cleanly. The bacteriology of "Kumoff" after it has been used would be interesting; it would, of course, teem with microbes, millions of which must have their habitat on walls and ceilings. "Nettwar" is a pink, soapy fluid containing some carbolic acid. It is a cleansing application for painted and varnished surfaces. Both preparations are essential to a sanitary equipment.

LIME JUICE WHISKY LIQUEUR.

(L. ROSE AND CO., LIMITED, 41, MITCHELL-STREET, LEITH.)

The analysis of this somewhat novel liqueur was as follows: absolute alcohol—by weight 29·67 per cent., by volume 36·04 per cent., equal to proof spirit 63·17 per cent.; sugar and extractives, 33·03 per cent.; mineral matter, 0·03 per cent.; and acidity reckoned as citric acid, 0·75 per cent. The whisky employed is stated to be malt spirit 10 years old. Judging from the smooth flavour of the liqueur and the spirit obtained from it on distillation this is probably a fair description. We could trace no objectionable preservatives; and, in fact, the alcoholic strength would render the addition of a chemical preservative quite unnecessary. The liqueur is somewhat syrupy and sweet to the taste, but in it is preserved the pleasing aroma of lime fruit. It is an agreeable and wholesome liqueur, having in particular to recommend it that its composition is declared. Lime juice and whisky are, by the way, not quite an unheard-of association.

INVALID SPECIALITIES, BEEF-TEA, JELLIES, ETC.

(POULTON AND NOEL, BELGRAVIAN WORKS, BREWERY-ROAD, N.)

We are glad to notice that the practice is increasing of inclosing invalid specialities in glass vessels and not in tins. Except the home-made beef-tea, which was submitted to us amongst other things for examination by the above firm, the jellies and the essence of beef were contained in air-tight glass jars. The beef-tea gave the following approximate analysis: water, 92·74 per cent.; total solids, 7·26 per cent.; mineral matter, 0·66 per cent.; and nitrogen, 1·13 per cent. The tea was opalescent but did not contain muscular tissue. Considering the proportion of water its real nutritive power is decidedly low. It possesses, however, a pleasant beefy flavour and is agreeably stimulating, serving to rouse also the appetite for more solid nutriment. The beef essence gave on analysis the following results: water, 86·30 per cent.; total solid matter, 13·70 per cent.; mineral matter, 3·76 per cent.; and nitrogen, 2·04 per cent. This is a well-prepared essence of agreeable flavour and helpful to invalids or those with enfeebled digestive function. It is perfectly clear and free from the smell and flavour of a preparation concentrated by heat. It contains, excluding gelatin, a comparatively small proportion of proteids. The calves' feet jelly was excellent in all respects, possessing a delicate flavour and consistence calculated to appeal to the fastidious palate.

FRANZISKANER LAGER BEER.

(J. SEDLMAYR, MUNICH, AND ANDRÉ STAHL AND CO., 47, MORTIMER-STREET, W.)

It is well known that some very definite control is exercised over the production of beer in Bavaria. It must be made from malt and hops only. The specimen before us is produced at the celebrated Leistbrau in Munich, and according to our analysis exhibits the usual excellent composition of Munich beer. Our analysis was as follows: extractives, 6·02 per cent.; mineral matter, 0·20 per cent.; alcohol—by weight 4·62 per cent., by volume 5·78 per cent., equal to proof spirit 10·13 per cent. The beer was evidently Pasteurised and we could find no chemical preservatives or, as we suppose we ought to add now, any trace whatever of arsenic. It is noteworthy that Munich beer, though less alcoholic than English beer, contains a much larger proportion of the nutritive extractives of malt. The specimen examined was excellent and in sound condition, possessing those characteristics of flavour and palatability for which Munich beer is esteemed.

NEW HOSPITAL FOR MONMOUTH.—At the annual meeting of the subscribers of the Monmouth Hospital, held on Dec. 22nd under the presidency of Lord Llangattock, it was stated that £4000 would be required for the erection of the new hospital and that £2356 had been already subscribed.

ROYAL MINERAL WATER HOSPITAL, BATH.—The committee of this hospital are making an earnest appeal for £6000 towards carrying out some extensive alterations and improvements in the institution. The hospital was opened for the reception of patients in 1742, since which time 76,000 poor persons have been admitted, of whom about 65,000 have been relieved. Patients are admitted without any subscribers' recommendations.

THE LANCET.

LONDON: SATURDAY, JANUARY 5, 1901.

1901.

WE do not propose here to make an attempt to summarise the scientific progress of the past century within the limits of a leading article. Our contemporary, the *British Medical Journal*, in an excellent special number published at the end of 1900, gave an account of the march of medicine during the past 100 years, and able and inclusive as the story there told is, we are certain that its authors would be the first to say that their difficulty was not what to say but what to omit. Yet with the dawn of a new century it is fitting that we should glance back over the old one, to see in what ways we have the right to call ourselves better than our fathers. Obvious progress, of course, there has been in most of the departments of human intellect, and this is especially true of that department of the intellectual process known as science. In art we may say without contradiction that we have not progressed. Compare any modern building with Durham Cathedral in ecclesiastical architecture, with Magdalen College, Oxford, in collegiate architecture, with Hatfield or Haddon in domestic architecture; put an ivory or a wooden carving of the middle ages beside a modern one, compare the textile fabrics of Venice in her glory with those produced nowadays (other than those that are openly imitations), and it will be seen that here we have made no progress. But in science the case is very different. Here we have learned from the efforts and mistakes of those who have gone before us, and in every instance and in every department of science we at the beginning of the twentieth century are far more advanced than was the race at the beginning of the nineteenth. The steam-engine remained for centuries a mere toy: from the time of HERO, B.C. 120, to the time of the Marquis of WORCESTER no use was made of the expansive powers of the vapour of water, and from 1663 until the era of WATT and STEPHENSON but little progress was made. But within the last 100 years we have slowly moved onwards from the "Rocket" of STEPHENSON and the little "Comet" of BELL to the mighty locomotives of our railway companies, and to H.M.S. *Viper* with a speed of 35 knots per hour. And yet the principle by which the latter is driven is the steam turbine first described by HERO over 2000 years ago, a fact which shows that what each generation deems to be perfection is only an example of transition.

In those departments of science with which we are nearly concerned—namely, medicine and surgery in their widest applications—we are more obviously in a state of transition than we are in any fields of exact knowledge. Surgery has advanced to a greater degree than medicine, but this is mainly because surgery, as its name states, is to some extent a handicraft. The technical methods of our day are far ahead of those of our ancestors. The discovery of anæsthetics and the perfecting of the antiseptic or aseptic system have made feasible operations the very thought of which would have stayed the hands of our ancestors. It is not that modern surgeons are necessarily better anatomists, or better practitioners than their predecessors, but that they have better tools, and a cleaner *milieu* in which to work. These facts account for the death-rate of surgical cases having shrunk in some instances almost to a vanishing-point. But we are not belittling the surgery of to-day. As a handicraft it has progressed notably. But surgery is not only a handicraft—it is also a science, and modern surgeons have progressed on truly scientific lines, for they have used the accumulated experiences of past leaders while benefiting by recent discoveries. With regard to medicine the progress has not been so obvious during the century. The identification of certain specific germs and the recognition of the evil powers of certain parasites, like the differentiation of typhoid fever from typhus fever, by leading to treatment based upon pathology have saved thousands of lives, and bid fair to save a yet larger number in the future. And small-pox has been robbed of its terrors by vaccination, but vaccination is prevention and not treatment, and it is in prevention that the modern progress of medicine has been made. And everything goes to show that it is in this direction that the main advances will be made during the twentieth century. Not that medical treatment is to be despised, for if the *materies morbi* gains access to the body it can be removed only in one of two ways—either by the knife or its equivalent, or by the natural defences of the organism aided by rest, careful dieting, and in some cases drugs, including such medicaments as the antitoxins. No one of us can cure a fever by medicines, but we can and do put the sufferer into such a position that his bodily powers are placed in the best possible state for coping with disease.

In olden times the medical man was looked upon as a wizard. When summoned to the bedside of a patient he dressed himself in a fantastic dress, rattled strings of bones, beat a drum, and howled invocations to the devils which were supposed to be causing the disease. Similar things were done in communities that esteemed themselves civilised and since the mediæval birth of learning; but such a bedside manner was quite in accordance with what was expected of the medical man; and sometimes the patient recovered. As time went on most of the fantastic accessories disappeared, but a hundred years ago there were still considered by the majority of observers to be special remedies for all special diseases. This last belief is by no means extinct at the present day among a large section of the public, where the "doctor" is someone who gives a "bottle" selected according to the particular illness on hand. The best "doctor" is here considered to be he who can most quickly give a name to the disease, for if he can do that at once he need have no hesitation about which "bottle" to administer; it follows, therefore, that the quack has an enormous advantage over the medical man, as the quack, unhampered by knowledge, is always ready with diagnosis and specific. The practice of medicine by taking prevention as its chief aim has effectually disassociated itself from all quackery, and the medical practitioner of to-day has earned the

right to be looked upon as one having a duty to perform to the State. Consider what the plague of London in 1665 meant. Nothing but the efforts of medical men prevented the plague of Glasgow in 1900 meaning the same thing. We give an instance of signal success, but how much remains to be done. Enteric fever and plague still ravage India, diphtheria and scarlet fever still cause many deaths in our great towns, and tuberculosis still cuts short many a life. With the last-named disease we seem to be about to be able to cope successfully; at any rate the new century will see an organised attempt in these islands to deal with the national infliction, while there are grounds for hoping that the prevention of malaria in some forms is within sight. The mention of this last disease reminds us that stress must not be laid upon the value of prevention to the neglect of remedial measures. Just as quinine is of proven value in malaria, so there are many remedies of tried repute for other pathological conditions and morbid symptoms. While the ideal of medicine is the prevention of disease, the practice of medicine consists in the application of general treatment and special remedies. How much can be done for the sufferer by a medical man having all the modern resources of therapeutics at his command we all know—the public and the medical profession alike. How those resources may be increased by physiology, chemistry, and the comparatively new science of bacteriology in the near future we can only guess.

During two-thirds of the past century THE LANCET has tried to be, and has we hope succeeded in being, a faithful and impartial chronicler of progress in medicine, in surgery, and in hygiene. We have noted mistakes and failures as well as successes, and by both our readers as well as ourselves have profited. Our egoism will, we hope, be pardoned if we point out that to THE LANCET and its Founder are due such reforms in the profession of medicine as the Medical Act, the Anatomy Act, the provision for a medical education of the best kind, and the banishment of nepotism and favouritism from the great hospitals. All these reforms took place during the century that has gone, and to them is due the enormous change that has taken place in the position occupied in the public eye by the medical practitioner. It only remains for us to say, on the threshold of the new century, that we are honestly proud of the long and steady support which THE LANCET has received since its commencement from the medical world, and that we shall strive during 1901 to work as we have worked through the past 77 years for the welfare and advancement of the profession that we love.

The Sanitary Administration of the County of London.

IT is satisfactory to gather from the annual report of Mr. SHIRLEY MURPHY, the medical officer of health of the County of London, which was published last week, that the county maintains its sanitary condition. This state of affairs may be regarded as dependent in no small degree upon the ability and zeal with which Mr. SHIRLEY MURPHY and his officers are known to approach the many difficult problems that are necessarily involved in the efficient sanitary administration of a crowded area like London and its environs. Supplementary reports are contributed by Dr. W. H. HAMER on the sanitary administration of Kensington, and by Dr. C. W. F. YOUNG on the sanitary condition of cemeteries and burial-grounds. Dr. HAMER considers that the staff of sanitary inspectors in Kensington should be increased, and Mr. SHIRLEY MURPHY endorses this view. Dr. YOUNG found it not possible to estimate accurately the length of time for which the existing provision of burial-grounds would suffice, but he shows that there would be advantage in steps being taken to encourage methods of interment, advocated by Sir F. SEYMOUR HADEN and Dr. G. V. POORE amongst others, which aim at the speedy dissolution of the body. For the present we have not space for dealing with the interesting statistical returns contained in Part I. of the report, which deal mainly with the question of population, with the figures of the births, marriages, and deaths in London, and with the prevalence of disease in the county. These statistics represent an enormous amount of careful, we might almost say loving, work, and are entitled to separate treatment on another occasion; for the present we must be content with referring to the various matters of administration which are dealt with in Part II.

Interesting and terrible disclosures have been made during the year in connexion with the trafficking of those deliberate fiends who attempt to sell, and too often succeed in selling, animal food absolutely unfitted for human consumption. We take, for example, the following cases. Mr. SHIRLEY MURPHY had occasion to inquire into the business of a knacker who was sending animal flesh to certain premises in the east of London. The occupier of these premises was presumably a dealer in cat's meat, but suspicion was aroused that this particular consignment of flesh was intended for human consumption, since it was dressed in a manner which was consistent with this view. It transpired that among the customers of the occupier of these premises was a "manufacturer of high-class meat pies." It is not surprising, therefore, that Mr. SHIRLEY MURPHY is once again led to emphasise, as he did in his last report, the need for adoption in London of a system of meat inspection similar to that of many large foreign towns. There is no systematic inspection of meat in London, and until an efficient system is adopted there is not the least doubt that unsound meat will be freely introduced from all parts into London, to the prejudice of the poor who at present receive no assistance from the authorities. The sale of tinned foods to the public in a state of decomposition forms another and similar instance of outrage of the commonest instincts of humanity. Tins of milk, salmon, sardines, soups, rabbits, compressed beef, and vegetables, bearing every evidence of the rottenness of their contents, are, it will be seen from this report, bought in large quantities from importers who have rejected them for their own purposes. This garbage eventually finds a sale amongst the poorer classes. The tins are pricked to let out the putrid gas, are resoldered, have fresh labels pasted upon them, and the appearance of a wholesome article is thus given to them before they are retailed to the defenceless poor. The iniquity of one transaction detailed in the report was emphasised from the fact that the invoices produced

were marked "pigs' food," but the infamous dealer failed to show that he had ever sold a tin in his life for pigs' food. By recounting in detail one such story Mr. SHIRLEY MURPHY proves among other things the desirability of the London County Council organising larger powers of control over the sanitary condition of premises on which food is prepared for sale. There can be little doubt that food has often proved poisonous on account of having been exposed to a filthy environment during preparation, as, for instance, exposure to the gases or effluvia from sewers and drains. We might mention that such powers are urgently needed in the case of premises where ice-cream is manufactured. "Deaths from ice-cream" is a familiar heading in the summer newspapers, and so long as the filthy conditions of the Italian quarter in Hatton-garden, described by our Sanitary Commissioner some years ago, are maintained, there can be no wonder that fresh victims are added to the list. We have suggested the plan of registering persons engaged in the preparation of all food-stuffs, and some such means of reform will have to be undertaken.

Sanitary authorities in the County of London appear to be moving tardily in the matter of providing public means of disinfection of infected articles. It is to be hoped that the constitution of the new metropolitan boroughs will bring to an end the delays which have been primarily responsible for the unsatisfactory arrangements which have hitherto existed in many parts of London. A further important point in this matter is mentioned by Mr. SHIRLEY MURPHY—that is, the need for provision of laundry accommodation in connexion with the apparatus for disinfection, so as to obviate the necessity of householders sending to public laundries articles which are infectious. The satisfactory removal of house refuse, though formerly a bugbear of all sanitary authorities, is steadily extending. The effect of the introduction into districts of a system of weekly calls at each house for the purpose of removal of refuse, instead of the old method of the dust-cart perambulating the streets and calling only at houses in which the need for collection is manifested by the exhibition of a D-card or on request of the householder, is shown by the reduction in the number of complaints dealt with by the sanitary authorities. In some districts, however, improvement is still widely needed in regard to dust collection. Householders are sometimes negligent in this matter themselves, in which case, of course, they are to be blamed for any insanitary development, the only regrettable thing being that the offenders against decency are not likely to be the only victims of their criminal carelessness.

The flooding from sewers—notably in Kensington, Newington, Battersea, and Plumstead—has led the County Council to adopt certain resolutions in regard to a scheme for providing additional outfall sewers. This would involve for both sides of the Thames an expenditure of nearly £3,000,000 of money. It is to be feared that London sewers are taxed to the very utmost, and, if we mistake not, we have in these occurrences only the beginnings of a future great problem which must be seriously faced. Nuisances arising from sewer ventilation continue to be complained of, but the complaints cease as level ventilators are closed and shafts erected to take their place. The pollution of the river Lea calls for serious attention owing to the unsatisfactory condition of the effluents from the sewage-farm at Walthamstow and the sewage works at Leyton, but apparently no progress has yet been made in the direction of improvement by the responsible parties. The pressure of a central authority is very properly suggested by Mr. SHIRLEY MURPHY and we shall be glad to hear of such pressure in operation.

A supplementary report embodying the results of the examination of cows in London cowsheds, both generally and in regard to tuberculous disease of the udder, is contributed by Mr. P. J. SIMPSON. This gentleman's appointment was recommended by the Public Health Committee so as to give effect to the new Order of the Local Government Board relating to tuberculous disease of the udder of the cow. As a result of inspection Mr. SIMPSON and his two colleagues recommended (*a*) that for the purpose of giving effect in London to the Dairies, Cowsheds, and Milkshops Order of 1899 the cows in London cowsheds should be examined by a veterinary surgeon and two assistants at intervals of three months and suspected cows at more frequent intervals; and (*b*) that 100 samples of milk should be sent for bacteriological examination. These recommendations were ultimately adopted by the Council. Mr. SIMPSON found that out of the 5144 cows that were inspected 4464 were free from disease or abnormalities of the udder.

Continued activity is maintained in regard to checking the smoke nuisance. Proceedings, we are glad to hear, were successful in all but a few cases. The chief officer of the Public Control Department of the London County Council (Mr. ALFRED SPENCER) adds in his supplementary report that "so many improvements have been made in recent years in furnace construction that with proper care in stoking no nuisance need be caused." That describes exactly the attitude we have adopted on this question for several years past.

We have made no attempt to do more than indicate the contents of Mr. SHIRLEY MURPHY'S vast record of work done. A dozen subjects, many of them every whit as important as those we have selected for notice, are not here alluded to, while in numerous places the report calls for exhaustive consideration by the physician and statistician alike. But we have said enough to show that our mighty metropolis at the beginning of the new century is receiving excellent sanitary care. The task before the medical officer of health of the County of London and his assistants is tremendous, but supported as they are by the consciousness of successful labour in the past and of hearty coöperation by the new boroughs in the future, they are sure to give a good account of themselves.

The Employment of Unqualified Dispensers.

THE finding of the General Medical Council in the case of Dr. JOHN M. THOMSON which we reported in THE LANCET of Dec. 8th, 1900, p. 1695, is one of much importance to general practitioners, especially those of Scotland. In fact, in Scotland the matter constitutes a burning question. Meetings of the profession have been called in different places, at each and all of which certain speakers have spoken with much warmth. At one such meeting, that of the

Glasgow Southern Medical Society, where Dr. WILLIAM WATSON presided over a crowded assembly, the *locus standi* of the General Medical Council was questioned, and further meetings, where presumably the same feeling will be manifested, are promised in the near future. Although we deprecate any undue warmth in the discussion of this question we can readily understand that the practitioners of Scotland have felt embarrassed by the decision of the Council. It has come upon them suddenly. Dr. THOMSON himself had only short notice of the complaint made against him. The President of the General Medical Council explained that this apparent hurry was due to the view that it was kinder to Dr. THOMSON to bring the matter to an issue than to leave it in suspense for six months. This is quite intelligible, but nevertheless the question is a new one. There may not be much to say on the side opposite to that taken by the General Medical Council, but the matter will be all the better settled by the avoidance of undue haste in the future stages of the case, and by due consideration of those affected by the decision of the disciplinary body of the profession.

Let us state shortly and clearly the nature of the complaint against Dr. THOMSON as well as the action taken by the General Medical Council. The complaint was that, being a registered medical practitioner, Dr. THOMSON employed as assistants—he had had at least two such—"for the sale of drugs and poisons persons who are not qualified to act as chemists or pharmaceutical assistants, and thereby caused such persons to commit breaches of the Pharmacy Act." The first thing that occurs to anyone in reading such a complaint is that it would come more naturally from the Pharmaceutical Society than from the General Medical Council. Why should the General Medical Council do the work of the Pharmaceutical Society? The question is a natural one. The druggists are constantly invading the domain of the medical man and doing his work—diagnosing and prescribing as if they were educated and entitled to do so. The medical profession is badly treated by many pharmacists qualified under the Pharmacy Acts, and it is natural to ask why the General Medical Council should act, or seem to act, against a registered medical practitioner for an offence under the Pharmacy Acts. But there is an answer to the question. The Pharmaceutical Society had instigated no less than 46 prosecutions of unqualified druggists' assistants and had done so with little effect. The law is that the actual seller of the drug or poison is to be convicted, not his principal. The actual seller is generally poor and the practice of employing an unqualified person is very general in druggists' shops. Accordingly, the fine imposed is very nominal and the custom goes on unchecked. In other words, the Pharmacy Acts in Scotland are largely nullified. Obviously the evil calls for an amendment of the Pharmacy Acts, making the principal—whether chemist or medical man—responsible for the acts of his agent. But here comes in the action of the General Medical Council. Clearly it has no jurisdiction over druggists or the proprietors of druggists' shops. But when a medical man engages an unqualified person to take charge of a dispensary for eight hours out of 40 daily, who sells all sorts of drugs even to children—including half an ounce of laudanum of which no record was kept in a book—it is surely time to ask if the General Medical Council can do nothing to stop a practice so dangerous to the public and so discreditable to the profession. If the law cannot effectually touch the druggists at least the General Medical Council can check such dangerous practices among those who owe it allegiance. The General Medical Council allows the legitimate use of a dispenser to make up the prescriptions of the practitioner who employs him on the supposition of direct personal supervision of the work done and of the responsibility of the principal. But all these conditions fail in Dr. THOMSON'S case. The principal is absent for eight hours out of the working day, and the drugs are supplied irrespectively of medical prescription. And a certain sanction is given to the business by the fact that the proprietor of the shop is a medical man. That the premises are owned by a medical man is taken to mean that he is present and is answerable for all that is done. No medical man can really approve such a system. There is nothing medical or professional about it. It is distinctly contrary to the public interest that a medical man should give his sanction to a system so loose and so likely to lead to the injury of the public. In this particular case the laudanum, to the sale of which allusion has been made, was used suicidally by a woman in the sufferings following upon childbirth. This, of course, was an exceptional tragedy, but it arose out of an habitual state of affairs and is a telling argument against such a state.

The General Medical Council could scarcely be expected to act otherwise than it did when such a system was brought under its notice. It is responsible to the public for the regulation of the professional conduct of registered practitioners by certain great principles, and it must not evade the delivery of judgment in individual cases. Accordingly in this instance it found the complaint against Dr. THOMSON proved. It very properly adjourned the further consideration of the case till May. The Council, through its President, expressed its sense of the gravity of the charge, and gave Dr. THOMSON an opportunity to fully consider his position in the interval. Dr. THOMSON will act wisely by looking at this question from the standpoint of the General Medical Council and of the great majority of the medical profession. He must dismiss from his mind all idea that he has been sacrificed to the little jealousies of druggists, or to over-anxiety on the part of the General Medical Council to do the work of the Pharmaceutical Society. The General Medical Council has to provide that the action of medical men shall be regulated on such principles as will secure the welfare and safety of the public, therefore it was bound to prohibit him from using unqualified men in the manner that he was doing. We have no wish to be hard on Dr. THOMSON. In keeping a shop for the sale of drugs and poisons over the counter, in trade fashion, and without prescribing, he only did what many others of his profession do in his division of the kingdom. The custom is an old one belonging to more primitive days, and even now in lonely parts it may be capable of some justification. But in general, and at this time of day, it is not one consistent with the welfare of the public or the dignity of

the profession, therefore it must be altered. The practitioners of England have had to learn that they cannot use unqualified assistants. The lesson has been a hard one, involving removal of not a few from the Medical Register. The Council has insisted on this reform in England in spite of the obvious hardships inflicted by it upon the whole class of unqualified assistants and upon not a few practitioners. It must not hesitate to require in the same way that medical practitioners in Scotland, or elsewhere, shall not lend their professional name and status to cover a use of unqualified assistants in an open shop. Such a proceeding is quite different from that of dispensing the private prescriptions of a medical man under his immediate supervision in his private dispensary. Medical practitioners are at liberty to adapt themselves and their terms to their environment and to the modest means of those who need medical advice, but they are not at liberty to use their professional status to defeat Acts of Parliament, and to bring enormous risks at the same time within reach of the public whose health is presumed to be their care.

Annotations.

"Ne quid nimis.

THE NEW YEAR HONOURS.

THE new year's list of honours is remarkable in one way—namely, that no peerage has been conferred. Of those who belong to, or are connected with, our own profession we have to note the names of Thomas Barlow, M.D., F.R.C.P. Lond., and William Selby Church, M.D. Oxon., F.R.C.P. Lond., who have both been honoured by a baronetcy being conferred upon them. Dr. Barlow is a physician extraordinary to Her Majesty the Queen and is also physician to the Household. Dr. W. S. Church is President of the Royal College of Physicians of London and his baronetcy may be regarded as much a tribute to his official position as to his recent services on the Hospital Commission. In this connexion it should be noted that in the Order of the Bath Lord Justice Romer has been made Grand Cross. Lord Justice Romer, it will be remembered, was chosen to preside over the commission of inquiry into the management of the hospitals and other medical matters in South Africa. Among the Knight Commanders of the same order is the name of Sir William Turner, M.B. Lond., F.R.C.S. Eng. & Edin., the President of the General Medical Council. In the Order of St. Michael and St. George, Maximilian Frank Simon, M.D. St. Andrews, late principal civil medical officer of the Straits Settlements, has been made a Companion upon his retirement from office. In the Order of the Indian Empire Major John Crimmin, V.C., I.M.S., has been made a Companion. Among those who have received the honour of knighthood is Hugh Adcock, C.M.G., L.R.C.P. Edin., M.R.C.S. Eng., who is physician to H.I.M. the Shah of Persia, while Colonel James Sutherland Wilkins, I.M.S., and Arthur Neve, F.R.C.S., L.R.C.P. Edin., have been decorated with the Kaisar-i-Hind medal for "public service in India." Mr. Neve is a medical man working at Srinagar, Kashmir, under the Church Missionary Society. Lord Justice Romer's name is not the only non-medical name that deserves mention in THE LANCET. Among the new knights are Mr. Edward Henry Busk, Chairman of Convocation in the University of London, and Mr. Alfred Cooper (of Surbiton) whose philanthropy is known to our readers. Mr. William Jameson Soulsby, C.B., the secretary to so many Lord Mayors of London and secretary to the Mansion House Indian Famine Relief Funds in 1877, 1897, and 1900, has been made a Companion of the Order of the Indian Empire. To all these gentlemen we offer our best congratulations upon their well-earned distinctions.

THE LONDON WATER-SUPPLY OF A HUNDRED YEARS AGO.

VERY great changes have taken place in the water-supply of London during the last 100 years. At the commencement of the nineteenth century a large number of the people obtained the whole of their water from wells. Many houses had private wells, but in addition to these there were a great number of public wells in the streets. These were filled with surface water, and their depth below the ground level was not great. At the present time we are not aware of the existence of any private surface wells from which the water is used for drinking, but there are a fair number of deep wells which pass through the London clay into the chalk and from these excellent supplies are still obtained. One public pump still exists in Kensington Gardens, and there is one in Aldgate, but for many years the latter has been supplied with filtered water. At the beginning of the century it was quite a common thing for the inhabitants who lived near a public pump to send there for the supply which they required for drinking and for household purposes. Many of the wells became contaminated and towards the middle of the century the incidence of cholera in the neighbourhood of the pump in Broad-street, Soho, led Dr. Snow to make those careful researches which led to his discovery of the chief method by which cholera was spread in London. The oldest organised system of water-supply which existed in the metropolitan area was probably that of Westminster, for in the year 1800, and, indeed, till the middle of the century, the Abbey precincts obtained their water from Hyde Park. Some parts of Westminster were at that time supplied by the Chelsea Company, whose reservoirs were then situated in Hyde Park and in the Green Park. The site of the former is still plainly to be seen near Park-lane, not very far from the Duke of Westminster's house. It has been converted into a sunk garden. The Green Park reservoir was not far from Piccadilly, nearly opposite Half Moon-street, but the exact site is not at the present time marked by any visible trace. Other parts of Westminster were supplied by the New River Company, and by the York Buildings Company which pumped water directly from the Thames. The works of the latter company were near the Adelphi Buildings, and their tower is a prominent feature in all the contemporary drawings of that part of the north bank of the Thames. The company's customers were chiefly the residents in the Strand and in the adjoining streets. At this time (1800) much building was going on in Marylebone, which was not well supplied by the New River Company, and during the next few years two companies, the West Middlesex and the Grand Junction, were started to supply this important new residential area. Holloway and parts of Tottenham Court-road derived their water from Hampstead. In the City of London the New River Company had no monopoly and the London Bridge Waterworks Company still had a considerable number of customers whom they lost a few years later because they were unable to supply water at a pressure sufficient to reach the upper storeys of the houses, a condition which had become necessary in consequence of the exigencies of more modern sanitation. The East end of London in the year 1800 was supplied by waterworks situated at Shadwell and at Hackney. The New River Company declined to supply the latter place unless a certain minimum annual water rent was guaranteed to them. The source of

supply of the Shadwell Company was the Thames, and that of the Hackney Company, the Lee. The residents of South London bought much of their water from merchants who took it round in carts. The London Bridge Waterworks pumped some water to Southwark and there were other works near the church of St. Mary Overie. The Lambeth Company was started about the year 1795 and soon promised to do a roaring trade. It was energetically worked, the proprietors taking an active part in the extension of the business. At one time pipes could not be obtained quickly enough to satisfy the impatience of those desirous to be customers. The pipes then in general use were made of wood, usually of elm, and the lumen of the tube was formed by boring out the centre of a tree. The pipes fitted into one another and were fastened together by a band of iron. Such pipes are frequently dug up when the streets of London are excavated, and attention was lately called to one found in the City of London by a gentleman who happened to be passing when it was unearthed, and who promptly wrote to the *Times* concerning a portion of Roman drainage which he had lately discovered. A few specimens of these pipes have been preserved and two of them may be seen any day opposite a house situated on the south side of Jermyn-street, not far from St. James's Church. Wooden pipes were not very satisfactory, considerable leakage often took place at the joints, and it was computed that something like a fifth of the amount of water sent from the works was lost during its transit to the houses of the customers. It would be a mistake to suppose that wooden pipes were the only ones in use at the beginning of the century. Some of the mains and some of the smaller pipes also were made of lead. Wooden pipes, however, were in general use. Attempts were made at a later date to replace them by a substance called "artificial stone," but this material proved eminently unsatisfactory. Iron pipes were then introduced, and although the initial expense of these was considerable they led to a great saving in the amount of water wasted, and were capable of standing high pressure without any untoward results. Very little was done at the beginning of the century in the way of water purification. Most of the companies pumped their supplies directly from the Thames and contented themselves by keeping out the grosser impurities by the use of a sort of sieve. The Chelsea Company's water was allowed to settle for a short time in their reservoirs, their customers not being sufficiently numerous to necessitate pumping every day. Of the public supplies that of the New River must have been by far the best. Some of the water came from a beautifully pure spring at Chadwell and that derived from the upper Lee was much superior to the Thames water. The New River itself was carefully guarded by stately officials who are represented in pictures as wearers of top hats and who had bound themselves by an oath to do their duty. Magistrates then took a severe view of the culprits who ventured to bathe in the river, and the offence was in the eyes of the law not a light one. The proprietors of the company and their friends made an annual survey of their property to see that everything was right; the survey occasionally occupied two days and the proprietors were wont to go down the river in a barge. It must have been a charming excursion 100 years ago. For the New River, in spite of the complete transformation of much of its landscape, is not devoid of beauty to-day.

THE AFTER-CARE ASSOCIATION.

THE work of the After-Care Association in helping poor persons discharged after recovery from asylums for the insane is deserving of greater support than it usually obtains. A home for convalescents from mental disease is a necessity, as was pointed out long ago and often by the great Earl of Shaftesbury during his prolonged office as chairman of the Lunacy Commissioners. Yet among the 240 convalescent homes on the register of the Charity Organisation Society not one appears to be specially designed and available for such inmates. The After-Care Association, by obtaining for these people, when needful, an interval of change of scene and air, by giving them grants of money and clothing, and by assisting them to obtain suitable employment, endeavours to fill a hiatus which ought not to exist. The work needs extending greatly, but this cannot be done until the necessary funds are forthcoming. The annual meeting of the association will be held in the library of Lambeth Palace on Jan. 29th, at 2.30 P.M., when the Archbishop of Canterbury will preside. All communications should be made to the secretary, Mr. H. Thornhill Roxby, Church House, Dean's Yard, Westminster, S.W., by whom contributions will be thankfully received, or they may be paid into the account of the "After-Care Association," Union Bank of London (Regent-street branch), Argyll-place, London, W. Any of our readers in search of an object for their practical benevolence can be certain that in this association they have a most worthy object, and as such it may be confidently recommended by them to laymen.

NIGHT-TERRORS IN INFANTS.

DR. ALFRED BEYRAND contributes in a recent *Thèse de Paris* (1900) an interesting clinical and psychological account of the night-terrors of children. This form of cerebral disturbance had been long recognised and in 1867 Dr. Sydney Ringer stated that there was a close analogy between night-terrors and nightmare. He adduced as common causes of both troubles bad food, excessive feeding at night, intestinal worms, and difficult dentition. Steiner (1876), however, showed from a large number of observations that an idiopathic cerebral irritation, associated probably with a transitory cerebral hyperæmia, lay at the root of this morbid psychical and sensorial disturbance. Debacker (*Thèse de Paris*, 1881) showed conclusively that vivid hallucinations of sight and of bodily feeling enter into the pathology of night-terrors and more recently Braun (1891) and Kamenski (1893) have proposed to classify this ailment in the group of neuroses which includes hysteria and neurasthenia, the actual attacks of pavor nocturnus being indications of a profound morbid nervous taint in the child. Soltmann has also shown in the "Handbuch der Kinderkrankheiten" (edited by Gerhardt, 1898) that the children who suffer from night-terrors are anæmic and present a distinct neuropathic predisposition, and that they are the offspring of families in which neuroses are found to prevail. In the present thesis Dr. Beyrand quotes a number of cases observed personally, in which it appeared that hallucinations, mainly visual, played an important part in determining the attacks. It is pointed out that in severe attacks the child screams and cries with terror, and is completely oblivious of surroundings or of the presence of parents until the terror has subsided, that the end of the crisis is generally marked by the emission of clear urine and a falling-off to sleep, and that on waking the child preserves no recollection of the horror experienced. There is no stupidity or intellectual torpor such as characterises the post-epileptic state, nor is there any convulsion or biting of the tongue. The attack is also different from somnambulism and from the nightmare following an alcoholic debauch. After passing in review the exciting causes which may provoke an attack, such as gastro-intestinal irritation from ill-digested food, or worms, teething, and infectious fevers (e.g., pneumonia and typhoid fever), Dr. Beyrand shows that the habit in France of allowing the child to sip small quantities of wine along with

the parents during the evening meal is the most fruitful cause which provokes such attacks. Lead-poisoning from toys made of caoutchouc and pottery, leaden soldiers, and the like is pointed out as a cause of night-terrors, and belladonna and aconite injudiciously administered to children suffering from whooping-cough are said to have a similarly ill effect. Children who have been frightened by nurses with tales of ghosts, dark prisons, and other terrifying things are specially liable to suffer from night-terrors. Investigations into the family history of the child reveal that in most cases the commonest factor is an alcoholic or other neurotic habit or taint in the father or mother, to which can be traced the morbid nervous condition which expresses itself in the child as night-terrors. Attacks mainly occur during the third hour of sleep, and treatment should be directed to remove all exciting causes whether internal (alimentary) or external. The bromides may be given as cerebral sedatives, and the last meal of the day should be very light and non-irritating. Education of the child should be so regulated as to abolish and suppress all morbid fears and tales provoking fear.

"TO INAUGURATE THE CENTURY."

IN the public health section of our Annus Medicus we referred last week to the probability that the year 1901 would be written down in history as a red-letter year in so far as the prevention of tuberculosis was concerned, and we drew attention more particularly to the erection of sanatoria. It is now announced that the town council of Portsmouth have honoured themselves by initiating the movement. They have determined to inaugurate the century by promoting a fund for establishing a sanatorium for phthisical patients on the southern slopes of Portsdown Hill. Portsmouth is by no means alone in its determination to erect a sanatorium, but, as far as we are aware, no other sanitary authority has made the birth of the twentieth century a basis for the movement. To some, indeed, the milestones set, partly by nature, partly by man, upon the path of time make no appeal. The passing of a century to them is no more than the passing of a year. The prolongation of the sojourn of man upon this planet concerns them not at all. Why trouble ourselves, they say in effect, with the relief of suffering, with increasing the average duration of life, with the limitation of infection? What matter?

> "You know how little while we have to stay,
> And, once departed, may return no more."

Why, therefore, let the morrow disturb us?

> "To-morrow? Why, to-morrow I may be
> Myself with yesterday's Sev'n Thousand Years."

But those who are satisfied with such philosophy are not likely to peruse these lines, and their views need occupy us no further. Life is a riddle which we possess an irresistible desire to guess. The more thinking and responsible portion of those who for a time occupy the surface of this troublous planet feel impelled to promote the growth of scientific truth, so that even if no solution of the mystery of life follow they may at least do what they conceive to be their duty by their contemporaries and also by their posterity. It is for this reason that we ask whether some concerted movement for the good and comfort of the community by the promotion of scientific research may not fittingly mark the progress of the centuries. We should be glad to see the sanitary authorities throughout the country awaken to the occasion in emulation of the Portsmouth Town Council. The idea of erecting sanatoria for the reception and treatment of consumptive patients may not in all cases commend itself, but the opportunities open to public bodies for doing sanitary good are numerous. Those who pollute our streams by their sewage might be persuaded to put an end to such pollution; the communities possessing no isolation hospital might erect one, cities where animals are slaughtered in private slaughter-houses without proper inspection might provide their inhabitants with a proper abattoir and facilities for testing their animal food. And if none of these subjects appear sufficiently sentimental for an occasion which none of us who either read or write these pages will see again, let attention be turned to the housing of the poor. Upon that platform the theologian, the philanthropist, and the sanitarian can meet to their mutual gratification. But whatever scheme may be adopted by public bodies, the opportunity afforded by the dawning century of marking a stage of human progress in some definite manner should not be lost.

AMBULANCE CLASSES AND THE LONDON SCHOOL BOARD.

AMONGST the subjects recently introduced by the School Board for London into their scheme of instruction in their evening continuation schools are those of ambulance or first aid to the injured and home nursing. In the first instance an arrangement was entered into with the St. John Ambulance Association for instruction in these subjects. The School Board for London, however, wished to have the matter entirely under their own control. They now appoint their own lecturers and examiners, their object being to obtain uniformity in the instruction given and control of the standard of pass. They have their own syllabus, compiled from those of the St. John Ambulance Association, the St. Andrews Ambulance Association, and the Aberdeen Ambulance Association, and they grant their own certificate of proficiency. The course of instruction consists of 12 lectures given alternately by a medical man appointed by the London School Board and by a school board teacher who holds the board's certificate for teachers—a certificate which is of higher grade and for which there is a more complete syllabus of instruction and a longer course. With regard to the attendances the reports show an increasing number. In 1898–1899 the attendances were for ambulance, 6800; home nursing, 2425. In 1899–1900—ambulance, 9393; home nursing, 3252. The arrangement and general supervision of the scheme have been entrusted by the board to Dr. R. J. Collie, to whom the merit of its construction is greatly due. Whether ambulance classes come under the head of elementary education is, we think, an open question, and we should like to know in what the certificated teacher gives instruction.

CUNNINGHAM v. THE "DAILY EXPRESS."

WE must offer our hearty congratulations to the *Daily Express* on its success in the libel action brought against it by John Bernard Cunningham. The publicity given to the trial by the daily press renders it unnecessary for us to say more than that the alleged libels imputed to the plaintiff were, according to the construction which he placed upon them, that he was putting before the public a sham and pretended cure for consumption, and that he was a quack and a charlatan, and that the jury, after hearing the plaintiff's case as set forth by himself and his witnesses aided by the skilful advocacy of Mr. Lawson Walton, Q.C., stopped the trial in the middle of the defendants' evidence and declared themselves agreed that their verdict should be for the defendants. Satisfactory as the abrupt ending of such a law-suit may be, we may be excused for regretting that the defendants' case was not completed in order that the public might be more fully warned against the kind of person who endeavours to cozen them with sham cures for disease. It is better that a lie should be contradicted and exposed than that it should be merely disbelieved. For example, Cunningham's counsel said, presumably on his instructions, that the "Medical Defence Association" had inspected the diploma of the

plaintiff and had thereupon not persisted in certain objections which had been taken to Cunningham's proceedings. Dr. A. G. Bateman, general secretary to the Medical Defence Union, has since written a letter setting out what took place between the plaintiff and his society, a letter which, needless to say, shows that this statement put in the mouth of the plaintiff's counsel was without foundation. Dr. Bateman was in court ready to give evidence had not the stopping of the case rendered his testimony, and that of any other witnesses for the defendants, unnecessary. At the same time we admit that the early stopping of a case is a more complete and emphatic vindication of the defendants' conduct than that which results after both sides have been fully heard and after the judge has summed up, while newspapers which by outspoken comment on matters of public interest run the risk of libel actions do not wish to find themselves in jeopardy longer than is absolutely necessary. For the risk run by newspapers in dealing even with the most obvious charlatans is a real one. A few words may be written on such an occasion which cannot be wholly justified and a verdict for damages and costs may have to be faced, although the plaintiff criticised may have been a person deserving the strongest censure and exposure, and although it is clear that the action of the newspaper has been taken from no other motive than to protect and to warn the public. *Crede expertis.*

THE RESIGNATION OF MR. TRIMMER.

AT the December meeting of the Council of the Royal College of Surgeons of England it was announced that Mr. Trimmer had intimated his intention of resigning the post of secretary to the College in March next when he will have completed 42 years of service. Mr. Trimmer went to the College from the War Office as assistant secretary under his friend the late Mr. Edmund Belfour in the year 1859. His powers of organisation soon proved of great use to the College in the drafting of the Regulations and the arrangement of the examination for the Licence in dental surgery which came into existence through the charter granted in that year; and, indeed, from the time he succeeded to the post of secretary in 1865 his mastery of the intricacies of the various charters and by-laws has been of immense value to the College. Those who remember the negotiations for the proposed conjoint examination scheme between the universities and the corporations will not need to be reminded of the heavy work thrown upon Mr. Trimmer, and the resource which he brought to bear on the many discussions involved by the delicate questions raised was notable. He was also largely responsible for the details of the present scheme of conjoint examinations between the College and the Royal College of Physicians of London. Mr. Trimmer has well earned his retirement, and we trust that he may have many years of life and health before him to enjoy it. Certainly the College has been fortunate in having had the advantage of his services for so many years, and whilst the Council will naturally regret to lose such an old and faithful official, they will none the less feel confident that his successor, Mr. Cowell, who has acted as assistant secretary for the past 12 years, will carry on the duties of the office with energy and ability. We understand that the Council has voted a liberal retiring pension to Mr. Trimmer.

THE BRITISH CONGRESS ON TUBERCULOSIS.

WE have received the official programme of the British Congress on Tuberculosis, which will be opened in person by H.R.H. the Prince of Wales in the Queen's Hall, London, at three o'clock in the afternoon of July 22nd, 1901. The Congress will be held from Monday, July 22nd, to Friday, July 26th. Every British colony and dependency is invited to participate by sending delegates; while the Governments of countries in Europe, Asia, and America are invited to send representative men of science, and others, who will be the distinguished guests of the Congress. Papers will be read, and clinical and pathological demonstrations will be given, detailing medical and sanitary experience in the treatment and prevention of tuberculosis throughout the world; while the museum, which is to be a special feature of the Congress, will contain pathological and bacteriological collections, charts, models, and other exhibits derived from similarly widespread sources. Authorities in this and other countries will be invited to supply documents bearing upon the historical, geographical, and statistical aspects of the subject; while as a result of the papers and discussions, practical resolutions will be formulated which will serve to indicate the public and private measures which are best adapted for the suppression of tuberculosis. The work will be divided into four sections as follows:—Section I., State and Municipal: President, Right Hon. Sir Herbert Maxwell, Bart., M.P. Section II., Medical, including Climatology and Sanatoria: President, Sir R. Douglas Powell, Bart., M.D. Section III., Pathology, including Bacteriology: President, Professor Sims Woodhead, M.D. Section IV., Veterinary (Tuberculosis in Animals): President, Sir George Brown, C.B. The chairman of the committee having charge of the Museum of Pathology, Bacteriology, and Public Health, is Professor Sims Woodhead. The secretary to this committee is Dr. W. Jobson Horne, 27, New Cavendish-street, Harley-street, W., to whom all correspondence relative to the museum should be addressed.

THE NEGLECT OF THE AGED.

AN inquest held recently at Salisbury brought to light a state of affairs which, shocking as it seemed to the coroner's jury (who censured those responsible) is by no means without parallel. An elderly woman, 79 years of age, living in a house with her daughter, another woman apparently a lodger, and her husband, who though deaf was not stated to be infirm, had died after being ill for four years and bed-ridden for 13 months. Mr. H. L. E. Wilks, who had attended her some months before, had been called in again two days before her death and had found conditions which caused him to decline to certify when asked to do so, while his evidence, given after making a post-mortem examination, showed that the deceased died in circumstances of filth, starvation, and neglect which fully justified the indignant comments of the jury, although they did not think it necessary to return a verdict of manslaughter. We further note that the foreman, with the knowledge of the persons whose conduct is under inquiry that we sometimes observe in coroners' juries, remarked that the deceased's husband could have afforded a private nurse, while there was also a district nurse at hand whose residence was known to the daughter. General practitioners whose work lies among the poor, and particularly those who carry on their profession in remote country districts, will probably be able to recall similar instances of the callousness exhibited towards the aged and infirm, not only by their younger relatives, but by the husband or wife as the case may be. These seem to resent the prolonged existence of one who is a burden and a useless expense, and if they are deterred by fear of the law from taking active measures to accelerate the end, at any rate they do nothing whatever to avert or postpone it. Such conduct towards the aged is we believe customary in some savage tribes, while the lower animals recognise no duty towards the parent or the mate which has grown weaker than its compeers. In the unhappy family at Salisbury there was, no doubt, a resentful unwillingness to incur unprofitable trouble and expense, not tempered by what we term

natural affection—the sentiment among men towards their blood relations which is rather the product of civilisation and Christianity than of nature.

"ACUTE IDIOPATHIC ŒDEMA OF THE EYELIDS."

AT the meeting of the Société Médicale des Hôpitaux of Paris on Nov. 30th, 1899, Dr. Galliard read a paper on a curious and little recognised affection, to which he gave provisionally the title of "acute idiopathic œdema of the eyelids." In 1888 Riehl recorded the following case in the *Wiener Medicinische Presse*, No. 11, p. 353. A man, aged 51 years, who had suffered from supra-orbital neuralgia and rheumatism after the death of his wife, had in 1874, for the first time, œdema of the left eyelids. Several relapses followed. In 1878 the right eyelids were affected. From that time attacks on one or other side, or on both sides, were frequent. Then his lips were affected. In 1885 he had pharyngo-laryngeal œdema and threatening asphyxia. Attacks of cutaneous œdema occurred every 10 or 12 days. There were no general symptoms. In 12 years Dr. Galliard has seen only three cases of "acute idiopathic œdema of the eyelids." The first occurred in a woman, aged 20 years, who had unilateral swelling of the eyelids with slight redness. The second case was observed in a girl, aged four and a half years. One morning without apparent cause she showed unilateral œdema of the eyelids. 24 hours later it had disappeared. There was neither cardiac nor renal disease, nor alteration in the eye—not even conjunctival congestion. Ten similar attacks took place in the next two years. After a slightly disturbed night the eyelids on one side, right or left, were enormously swollen. There was neither pain, redness, heat, nor pruritus. At the close of the day the œdema had diminished, and in from 24 to 36 hours it had disappeared. It was never bilateral or accompanied by albuminuria. The temperature was normal. The child enjoyed good health and never had urticaria. The father had arthritic tendencies and suffered frequently from hay-asthma. The third patient was a girl, aged three years, who sometimes suffered from gastro-intestinal troubles, which were never complicated with urticaria. One afternoon after walking she complained of pain in the knee. At 6 P.M. there was hydrarthrosis of the right knee with slight pain and heat. There was no pyrexia. Salicylate of soda and antipyrin were given. On the following day the swelling had diminished and on the third day it had disappeared. As the tongue was furred and as the child had lost appetite an aperient was prescribed on the fourth day. On the fifth day the general condition was good, but in the afternoon a papular erythema of the lower limbs appeared. The left limb was most affected; on the leg the papules were confluent and formed a patch which ceased abruptly at the level of the malleoli. On the dorsum of the foot was another patch separated from the upper patch by healthy skin. The leg and foot were swollen. The temperature was 102·4° F. and the child was restless. On the sixth day there was marked improvement; the temperature was normal, the swelling of the limbs had disappeared, and the red tint of the spots was replaced by a violaceous one. On the seventh day the eyelids were enormously swollen. The right eye was completely hidden, the left not quite. The œdema extended to the lower part of the forehead and root of the nose. There was no redness. The child was unrecognisable. There was neither conjunctival congestion, pain, pruritus, pyrexia, nor albuminuria. Dr. Galliard diagnosed benign œdema of rheumatic origin. On the eighth day the œdema was diminished; the right eye could be opened and the left eyelids were normal. There were some purpuric spots on the buttocks and thighs. On the ninth day the œdema had disappeared. This case differs from the preceding ones in that the œdema was not an isolated phenomenon but one of a series of "rheumatic" phenomena. The pathology of certain forms of acute œdema is very obscure. They have been ascribed to rheumatism, gout, cold, and hysteria. Until more precise knowledge is attained Dr. Galliard suggests that the œdema in his cases should be described as idiopathic. Thus, "acute idiopathic œdema of the eyelids" is a recurrent affection without prodromata, which is observed on awaking in the morning. It predominates on one side or is unilateral. From the beginning it attains such enormous proportions that it cannot be confounded with cardiac or renal affections. It is soft and devoid of redness. It is not accompanied by alterations in the eye, pruritus, or pyrexia. It lasts from 24 to 36 hours. It may be preceded, accompanied, or followed by circumscribed œdema of the cheeks, lips, limbs, genital organs, or mucous membranes. It occurs in rheumatic, arthritic, and neurotic families.

THE PROBLEM OF SEWAGE DISPOSAL.

IT must be admitted that when distinct promise is given that the enormous volume of sewage discharged from the sewers of London can be satisfactorily dealt with bacterially, then other cities and towns may confidently hope that the same process is adapted to their needs. The interesting series of practical experiments conducted during the past two years on behalf of the London County Council by Dr. F. Clowes and Dr. A. C. Houston promise to culminate in success on a large scale, at least this is the conclusion to be derived from their latest report. As may be imagined, difficulties of all kinds have been encountered, but, as in all problems, the difficulties have been exceedingly instructive, and due advantage has been taken thereof, with the result that it is now considered advisable to adopt the bacterial method of treatment of London sewage in place of chemical treatment. It is further maintained that under the conditions existing in the lower river and at the outfall this system of treatment would furnish a more satisfactory result. This is substantially the remarkable conclusion of the chemist and bacteriologist of the London County Council respectively after two years' practical study of the question. We crystallise this conclusion from the results which appear in the third report on the subject, which has just been published, relating to the experimental intermittent treatment of London crude sewage at the coke-beds at the Barking and Crossness outfalls. The first and second reports were dealt with in THE LANCET of Oct. 14th, 1899, p. 1024, and March 3rd, 1900, p. 649, respectively. In the former number we dealt with the preliminary experiments at some length in a leading article, and in the concluding paragraph of that article we wrote: "We doubt whether a more promising solution than is suggested in the conclusions of this report of the great and vexatious problem of the rational disposal of the sewage of London has yet been forthcoming." Our confidence in this mode of bringing the problem into solution is now considerably increased. The process is reduced to simplicity itself, one of the chief requirements being that the crude sewage be first allowed to deposit its sediment prior to its discharge upon the coke-bed, where it is dealt with intermittently. The experiments which have been conducted on these lines renders the conclusion reasonable "that the experimental treatment of the sewage by rough screening followed by rapid sedimentation without the previous introduction of chemicals might now be attempted on a large scale, and that by this means an effluent of much greater purity than that at present discharged might be sent into the river." It is doubtful, however, whether the effluent, although chemically pure, is in

actuality above bacteriological suspicion of danger. But, as Dr. Houston remarks, a process which leads to the solution of the great mass of suspended matters in the raw sewage, which effects a striking reduction in the amount of putrescible matters, which avoids the use of chemicals and the accumulation of offensive sludge, which yields an apparently non-putrescible effluent, and which is at the same time practicable, is one which presents such singular advantages over chemical treatment, that it would be idle to deny its value or to attempt to minimise its usefulness simply because it falls short of a standard of absolute perfection. This is perhaps a rosy view, but these conclusions are based, in our opinion, on one of the best experimental investigations that has ever been carried out. We strongly recommend a careful perusal and study of this exceedingly interesting and valuable report to all concerned in this great question of sewage disposal.

THE PRINCESS OF WALES'S APPEAL.

PERHAPS no one can better appreciate the sore need of the families of the poor when the bread-winner is for some reason or other unable to render the aid which is expected of him than the medical man, and it is with feelings of the greatest sympathy that we refer to the appeal which the Princess of Wales, as President of the Soldiers' and Sailors' Families Association, has just issued. In a brief account of the work which the association is endeavouring to carry out Her Royal Highness states that since the commencement of the war over £510,000 have been directly entrusted to the care of the association, supplemented by £190,000 subscribed for wives and families to the Mansion House Fund, and £50,000 received from the Lord Mayor of London's "Discretionary" Fund. The whole of this sum, amounting to £750,000, distributed through the voluntary services of 11,000 ladies and gentlemen, members of the association, is now nearly expended. The last returns show that over 80,000 families have been relieved, but the number of cases do not diminish to the extent which might be expected owing to the fact that local funds have become exhausted and have transferred their cases to the association. At the present time not less than £50,000 per month are being given in relief. The aim of the association has been to maintain the families in the same position as they were when their supporters were at home. Assistance has also been given to aged fathers and mothers who relied upon their sons for support previously to rejoining the colours. "Without further funds," says Her Royal Highness, "these homes must be broken up and all that we have been doing for the last 12 months will be undone." The Lord Mayor of London has consented to receive subscriptions sent to the Mansion House for this object, and the Princess of Wales invites the coöperation of lords lieutenant of counties, and of lord mayors, provosts, and mayors throughout the kingdom to help her in the same way. Subscriptions will also be received by the local branches in each county and by the treasurer, Colonel James Gildea, C.B., at 23, Queen Anne's-gate, Westminster, S.W. Surely the appeal of the Princess will not be in vain.

WE announce with great regret the death of Dr. John Baptiste Potter, obstetric physician to the Westminster Hospital, which occurred on Sunday last, Dec. 30th, 1900. We shall publish shortly a fuller obituary notice.

LORD ROBERTS, who arrived at Cowes on Wednesday morning last, was graciously received on the same day at Osborne by Her Majesty the Queen. The whole nation is gratified by learning that the gallant Field Marshal has been created an earl and has also been appointed a Knight of the Order of the Garter.

"CLUCKS" AND "CLICKS."

BY W. AINSLIE HOLLIS, M.A., M.D. CANTAB., F.R.C.P. LOND.

AS the days of Boer supremacy in South Africa are numbered, it may be thought not uninteresting to consider, before it is too late, another residual product of the veldt whose days are also numbered so soon as English board schools are established in the Transvaal Colony and the Orange River Colony. I allude to the lingual "click" of Kaffraria and the surrounding districts. There are evidences, to which I shall hereafter briefly refer, that this suctional note was at one time widely distributed in speech among the nations of mankind. My present purpose, however, is to consider the physiology of an expressive sound—or, more correctly, series of sounds, for there are several modifications of the "click" still extant—and to draw attention to its close relationship to similar notes still in use as calls among some of the lower animals.

In general terms the "click" may be said to be produced by first pressing the tip, edges, and a part of the dorsum of the tongue against the hard palate, exhausting the air from the cavity so formed, and then, mainly by the action of the muscles attached to the styloid process and the hyoid bone, forcibly withdrawing the tongue from the position it has assumed. This operation allows the air to re-enter the partial vacuum and a "click" is the result. As regards the "clicks" at present in use amongst the Ngoni (Zulu), Xosa-Kaffir, and other of the Bantu tribes, European writers, such as Torrend, Elmslie, and Roberts, agree in dividing them into three varieties—namely, the dental, the palatal, and the lateral. The two first are chiefly distinguishable from each other by a reference to the position of the tongue-tip when the sound is made. In the former case the tip is placed close to the roots of the upper incisors; in the second case the tip is placed considerably farther back. The lateral "click"—which, by the bye, is still to be heard from the mouths of English drivers—is really a modification of the second form of note wherein the edge of the tongue is first raised for the re-admission of air instead of the tip. So we shall find that the Zulu "clicks" may be arranged physiologically under two headings—the anterior palatal and the posterior palatal, according to the location of the tongue-tip whilst the sound is produced.

If we now pass to the other side of the world, to the home of the Dakota Indians, we learn through the voluminous work of the Ethnological Section of the United States Survey of the Rocky Mountains that these tribes also possess, or until recently possessed, a language in which no fewer than four "clicks" were recognised. Phonetically these "clicks" differ from those of South Africa, in so far as each "click" represents a definite out-breathed consonantal sound modified by the suctional manner of its production. Yet, physiologically, the method of uttering these notes is very similar; and from what the writers of the dictionary state we may assume that the *p* and *t* "clicks" of Dakota were anterior palatal, and that the *c* and *k* "clicks" were posterior palatal. In other words, we find in each hemisphere of the world tribes of men who have retained in their speech these remarkable suctional notes, despite the fact that the rest of their language was composed of out-breathed syllables.

Man, so far as I know, is the only mammal which uses a suctional note. Curiously enough, certain lizards of the South African veldt, the so-called "clucking sand lizards" do, as their name suggests, utter a "cluck," which in their case is probably a sex-call. At home, however, in every farmyard there are endless opportunities of observing an avian "cluck." The "clocking" of a broody hen—as old John Ray, the seventeenth-century naturalist, called the sound whereby the domestic fowl summons its family to a feast—is familiar to us all. Certain peculiarities touching the nature of this avian cluck have led me to conjecture that it and the human "click" are both descendants of a common ancestral "cluck." The peculiarities in question group themselves for consideration under various headings—namely, the kind of sound, its structural cause, and finally its significance as a call. If we compare the "cluck" in this manner with the human "click" the striking affinities displayed in each instance will, I believe, justify the above

surmise. Unfortunately I have been as yet unable to investigate the "cluck" of the lizard to which I have referred. I have, in effect, restricted this part of the inquiry to the hen's "cluck."

To begin with the phonetic nature of the note. If a clucking hen surrounded by her brood of chickens be quietly observed three facts may be noted. 1. The sound produced is a disyllable, a "culuck" and not a "cluck." This observation, as we shall learn subsequently, is of interest. 2. The beak is closed when the sound is made. 3. The hyoid bone with the larynx ascends at the commencement of the note to sink again immediately afterwards. As regards the structures which bring about these results a few words may now be said, and in so doing I must apologise for describing the hyoglossal apparatus of the common fowl. From an observation published in one of the most recent text-books on birds it seems, however, that there is a very general idea abroad that the tongue has nothing to do with the utterance of all notes emitted by birds, with one possible exception, the sounds taught to parrots. Against this sweeping statement I must protest, and I feel that I can best do so by describing briefly the beautiful mechanism in the fowl's mouth and throat by which the cluck is undoubtedly produced. The somewhat V-shaped os hyoides has its body prolonged forwards in the form of a spur, which is embedded in the root of the tongue. At its distal extremity this spur ends in a hinge-joint about half an inch from the tongue's tip. A further spicule of cartilage extending mesially forwards to within an eighth of an inch of the tip and presumably bearing the horny covering of the under-surface of the fore-tongue, completes the joint. The joint is apparently furnished completely with bursæ, synovial cavity, and so on. By two cylindrical muscles arising from the greater cornua and terminating in two long tendons, one inserted on either side of the under-surface of the fore-tongue, this part of the organ can be bent downwards independently of the rest of the tongue. When the hyoid apparatus is moved upwards the tongue, which usually rests in a cavity between the rami of the lower jaw, is also raised, pressing against the cleft palate. This movement practically closes the resonant oral cavity behind. When the hyoid bone is subsequently lowered the back part of the tongue must immediately descend with it, and in so doing it unseals a part of the palate. Owing, however, to the joint in the mid-tongue, the fore portion can for awhile still retain its position in proximity to the palate until the further descent of the hyoid occasions its displacement also. And so it is apparently brought about that the chicken's tongue shall leave the roof of the mouth in two detachments and that their removal shall coincide with the descent of the hyoid bone and the emission of the disyllabic "culuck" of a "broody hen."

When the precursors of the Indo-Germanic nations decided to give up the primitive "click" for out-breathed equivalents that note had doubtless already been separated into the two great "click" families, the anterior palatal and the posterior palatal. This sub-division, as we may conjecture from the hen's anatomy, was probably in the first instance the direct result of structural necessities. When, after the lapse of geological ages, organic difficulties had been overcome and the mobile human tongue had devised fresh variations of the suctional note, these varieties, with their out-breathed equivalents, still fell naturally under two headings, largely dependent upon the distance of the tongue-tip from the upper incisors. Accordingly we recognise in the English "cluck," "click," "clock" and the German *glucken* an out-breathed equivalent of an ancient front "click"; whilst such words as the English "crack," the German *krachen*, and the French *crique*, *gripper*, hide the descendants of a post-palatal "click." An investigation of the modern "clicks" and their Indo-Germanic representatives strengthens this conjecture, as I shall briefly show. It will be noticed also that this inquiry indirectly confirms the hypothesis that the avian "cluck" and the human "click" have had a common origin.

Whether the sand lizards "cluck" whilst they excavate their burrows is more than I can assert. Every farm-labourer, however, will admit a close association between clucking and scratching the soil in the case of the domestic fowl. In the language of Dakota (of which, by the way, a dictionary has been compiled filling a thick quarto volume) precisely six words begin with a *c* "click," a few more begin with the *k* "click." Amongst that small number of words, a considerable percentage of which are conjunctions or other parts of speech, we nevertheless find two verbs, *ca*, *ke*, signifying "to dig," one, *héga*, "to scrape," and one derivative again, *kes-hé-za*, "trodden down, smooth"; the final word containing two *k* "clicks." This close association between the posterior "click" and scraping the soil is not confined to a nation of Red Indians, the Old English *cratch*, the Old Dutch *kratsen*, the German *kratzen* ("to scratch"), the French *griffer*, the German *graben*, and the English to "grub," or dig, probably conceal in the initial *cr*, *kr*, and *gr*, the out-breathed equivalent of the suctional note. If we turn to Zululand this relationship may seem apparently absent. It is traceable, however, although the mental connexion between the note produced and its significance is not the same in the two cases. Whilst in Dakota the operation of scraping the soil appears to have been uppermost in the mind of the primitive savage whenever he uttered the hinder "click," the ancient Xosa-Kaffir must have looked rather at the mechanism for producing this result—at the hooks and claws arming the limbs of men and animals when they harried the surface of the ground. To his simple mind the *Aasvogel* of the veldt (Zulu *inge*,[1] English "griffin," French *griffon*), was the embodiment of hooks and eyes, and its name was consequently the casket for one "click" or more. (Some tribes, I understand, introduce two "clicks" into this word.) Here again the Indo-Germanic group of tongues assist, for we find the Old English *crycc*, the English "crutch," "crook," and the French *croc*, represented in the Zulu *ibaxa*, a word containing a lateral "click."

I must not, however, occupy these pages with a philological disquisition. I shall conclude, therefore, with a few examples of the anterior "click" and its English equivalents. Such words as "clip" (Zulu *xcotyoba*), "clasp" (Zulu *pcca*), "cloudless" (Zulu *cwebile*), to be "clear" (Zulu *cansa*), to "close" the eyes, the mouth, the door respectively (Zulu *cima*, *cuta*, *vingca*), all have an anterior click; whilst the Dakota *tin-za*, "stiff" (as mud), *po*, "fog," "mist," have representatives in English "clay" and "cloud," a further support to the argument that the Indo-Germanic *cl* is the out-breathed equivalent of a front "click."

REFLECTIONS ON THERAPEUTICS.

BY HARRY CAMPBELL, M.D., B.S., F.R.C.P. LOND.,
PHYSICIAN TO THE NORTH-WEST LONDON HOSPITAL AND TO THE WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM.

I.

THE VIS MEDICATRIX NATURÆ; THE LIMITATIONS OF THERAPEUTICS.

ONE of the first lessons the young physician has to learn—too many never learn it at all—is the limitation set by Nature upon his therapeutic measures. He has to grasp this primal fact—that she herself is the great physician and that compared with the vis medicatrix naturæ his powers are feeble and insignificant. The potency of the vis medicatrix, the importance of relying upon it chiefly, allowing it full scope, and not for ever, by fussy interference, impeding its beneficent action, was brought home to me early in my medical career. It was forced upon me by the following analogical argument which, though open to criticism, as argument by analogy is bound to be, serves the purpose I have in view. The argument is briefly this: we may regard disease as a natural variation, as a variation from the normal, and just as all natural variations tend to revert to the normal, so also does disease. This brings the vis medicatrix into line with the phenomena of reversion.

Now there are two kinds of reversion. There is, first, reversion as commonly understood, or developmental reversion, that, namely, in which the organism does not develop on the ordinary lines, and of this variety I have nothing to say here. Secondly, there is that form of reversion in which the organism, having partly or completely developed, retrogresses and thereby displays lost characters belonging to past ancestors; it is to this second form that I wish to direct attention in this place. One of the most striking instances of it is afforded by acromegaly, most of the

[1] The Zulu "clicks" are usually rendered by the letters *c*, *q*, and *x*; these letters are merely symbols, and the "clicks" have no sonorous connexion with them. The *q* represents the posterior palatal "click."

characters of which, as I have shown elsewhere,[1] are anthropoidal—i.e., belong to the man-like apes. As another instance, and one more useful for my purpose than acromegaly, let us take the case of a cultivated plant allowed to grow wild—the cabbage, for example. Under such conditions it tends to revert to the condition of its wild congener. In short, when placed under primitive conditions it tends to revert to a more primitive and stable state. Similarly, in regard to disease: disease is a variation from the normal stable state and the organism shows a tendency to revert to that normal stable state when placed under normal, simple conditions of warmth, fresh air, and so forth. In each case the pendulum which has swung from the position of equilibrium tends to settle back in it, this backward swing in the case of disease being the work of the vis medicatrix.

The vis medicatrix a highly complex process.—But though it is easy enough to refer the vis medicatrix to the principle of reversion, when we come to examine carefully into the process we find that it is not by any means a simple one, but, on the contrary, inconceivably complex, a process in which the organism puts forth supreme efforts, bringing into play numerous mechanisms which have been laboriously evolved through the ages and in the evolution of which as much care has been bestowed, if I may speak teleologically, as in the evolution of the many other physiological attributes belonging to the organism—circulatory, respiratory, digestive, or what not. In other words, Nature is infinitely wiser in medicine and surgery (but especially in the former) than we are wont to conceive; she has a complete system of her own, and compared with her share in the healing process ours is insignificant in the extreme. If once we get thoroughly imbued with this idea, and if we realise how crude and impotent are even our most delicate and successful methods compared with the refinement and efficiency of hers, we shall be the more inclined to trust to her wonderful healing power, always seeking to give it the fullest possible scope, and scrupulously abstaining from lightly employing any means of our own, lest unwittingly we interfere with her work and only hinder where we hoped to help.

The surgeon is much less likely to err in this respect than the physician. He removes a piece of dead bone, pulls out a bad tooth, opens an abscess, and in all this he is acting in perfect conformity with Nature's own methods, only doing quickly what she must perforce do slowly. But though in such cases the results are obvious and unmistakeable, how small and insignificant is the surgeon's share in them compared with Nature's! Take the case of a tooth extraction: great good may be done by this operation which is as direct and rapid as it is effective, and yet even in such a case, where all the credit for skill seems to belong to the surgeon and little or none to the organism, when we come to look deeper we find the actual facts to be far otherwise. The surgeon's share in the result begins and ends with the removal by gross mechanical means of the source of irritation. To Nature is assigned the far more difficult and momentous task of repairing the injury actually inflicted by the operator himself in his effort at relief, and did she fail in her part the patient would assuredly die, in spite of the removal of the irritant, the original cause of trouble. For the injury is a violent one; bone is riven, muscle, nerve, and connective tissue are rent, vessels are torn, blood is poured out in profusion—all is chaos and confusion; but under the magic of Nature's ceaseless working out of that chaos and confusion order is unerringly restored, and that with marvellous rapidity. Armies of cells are engaged in the work of repair, and silently, slowly, with an adaptation of means to end a thousand times more exquisite than the utmost refinement of skill on the part of the surgeon, whose wrench, however deft, is coarse and rough in the extreme compared with Nature's imperceptible methods, the shattered tissues are repaired and an architecture is built up again, infinitely more delicate and more highly elaborated than anything that human ingenuity could devise. And all this is done so unobtrusively, unfalteringly, and painlessly that we accept the ultimate result as a matter of course, giving little or no thought to the means by which it has been effected.

But if even in surgery the vis medicatrix plays so large a part, how much larger is that which it plays in medicine? Here in the vast majority of cases Nature effects a cure unaided, and even in those instances in which the physician does good his share in the healing process is but small. Take valvular disease of the heart, on the treatment of which we are wont to pride ourselves, and consider the accurate readjustments which take place as regards hypertrophy and dilatation of the cardiac chambers and changes in the valves themselves.[2] And so it is with every disease which the physician is called upon to treat—Nature puts into operation special methods of cure of her own. There is, so to speak, a great physician resident in each organism—a body physician, in fact—who treats every illness in a special way, and we must beware that we in no way interfere with that all-wise healer nor arrogantly seek to teach her a lesson; rather let us work with her on her own lines and with open mind humbly learn of her.

This is not the place to attempt a study of these Nature-methods of cure: I am merely seeking to emphasise an all-important principle, and it will be sufficient if I call to mind what we have recently learned concerning the antitoxins. And what does this amount to? What but that the organism actually manufactures and administers medicine to itself! And elsewhere[3] I have sought to show that, apart altogether from the antitoxins, the blood and tissues contain numerous substances which play the part of drugs—"drug-substances" I have termed them—and that many of those metabolic by-products which we have been in the habit of looking upon as useless, or actually poisonous, exert an important influence in modifying functions, having on the organism, in fact, similar effects to drugs artificially administered.

All the great physicians of our time have grasped the fact—and it is more than half the secret of their greatness—that Nature is the chief healer and that many diseases are recovered from quite as readily without treatment as with it. This is why it is generally found that as the physician grows older his methods become simpler, that he abandons one drug and method after another, and finally settles down into a plan of treatment which we can best characterise as based on the slightest possible interference with Nature. The young physician, crammed with theory and all the "ologies," not unnaturally attempts to put into practice the knowledge he has laboriously acquired, and but too often it is to the great detriment of his patients. Over-assiduous, or rather over-officious, with the officiousness of inexperienced zeal, he must for ever be intermeddling, seeking to force Nature's hand rather than, as he should, to supplement her work. He is the helmsman—so he believes—of a storm-driven ship in dangerous waters and his the task to steer clear of the rocks and shallows. Accordingly daily and even hourly he worries his poor patient with treatment of some kind. If the temperature goes up he must reduce it; there is diarrhœa, he must stop it; or profuse sweating, this also must be checked. Eventually the patient recovers, and the physician fondly deludes himself that the recovery is due to his skill, whereas in all probability it would have been as quick, perhaps quicker, if after a few simple directions the patient had been simply left to the ministrations of a good, sensible nurse. I could cite numerous cases in illustration of this truth. The one which I shall quote, though taken from the sphere of obstetrics, will answer my purpose as well as any.

When I was on a visit to the country some years ago a local practitioner called on me and asked if I could see a midwifery case with him. I explained that though I was not altogether ignorant of obstetrics as taught in the books, I was not a practical obstetrician; but as, in spite of my disclaimer, he continued urgent, I consented to go, on the understanding, however, that I should not interfere with his methods or accept any responsibility in the case. It was a first pregnancy, and we both agreed that the presentation was a breech. As the woman had been in labour some time he decided that a leg ought to be brought down. This view did not altogether commend itself to me, for there was no evidence of obstruction of any kind and careful measurements showed the pelvis to be normal, the soft parts appearing so also. However, my colleague was confident as to the correctness of the procedure, and as he had had a large experience I deferred to his judgment. After a good deal of effort one leg was got down, and shortly afterwards the second. Whereupon—and before I had time to hinder him—my companion seized both the legs and forcibly pulled

[1] The Scalpel, January and February, 1896.

[2] I have elsewhere shown that in obstruction of the cardiac orifices these latter and the passages leading up to them are so modified as to facilitate to the utmost degree possible the flow of blood through them. (THE LANCET, March 10th, 1894, p. 594).

[3] "The Craving for Stimulants," THE LANCET, Oct. 21st, 1899, p. 1091.

upon them, with the inevitable result that the arms got extended over the head, and, the latter likewise extending, the chin hitched against the pelvic brim and became fixed there. There was little difficulty in delivering the arms, but the head, in spite of powerful traction made upon the body, stuck firm. The practitioner thereupon proceeded to decapitate. I suggested, but without avail, that this might not be an altogether wise procedure, since it would deprive us of a means whereby traction could be made. After the operation had lasted about half an hour the operator was quite exhausted, large beads of perspiration standing on his forehead, and I relieved him, making occasional attempts to deliver the head by lifting the child's body on to the mother's abdomen, &c. (it was an occipito-anterior case) and eventually succeeding. When the head was delivered what was my dismay to find the practitioner pulling on the cord for all he was worth. Matters now assumed a serious aspect; hæmorrhage was profuse and the woman fell into a faint. Finally, however, to cut the matter short, we succeeded in getting the uterus to contract firmly and the patient ultimately made a perfect recovery. As I was bidding him good-bye that night that medical man said to me: "Well, what do you say to the case? I know; you think that if we had left the patient entirely alone everything would have gone on all right." I nodded, and we parted. Now, if ever there was an instance of meddlesome interference, and that of the worst sort, this was surely it. The wrongness of the methods adopted is self-evident, flagrant, all the accepted canons of obstetrics being deliberately set at nought; but I make so bold as to say that we physicians not infrequently subject our patients to treatment every whit as pernicious, though, because it does not comprise mechanical operations the effect of which can be accurately gauged, but works insidiously and imperceptibly, the harm done is not so readily appraised and brought home to us as in cases like that just cited. Let us boldly acknowledge the humbling truth that patients often get well, as in the above case, in spite of our treatment not because of it, and let me urge the younger members of our profession to endeavour to realise early in their career the limitations of therapeutics, and not to wait till many years of hazardous experiment and painful failure have burnt the fact into their consciousness.

These limitations are, as already hinted, far greater for the physician than for the surgeon. A surgeon in extensive practice saves hundreds of lives and relieves untold distress by his direct personal intervention, and every day sees the physician more dependent upon his aid. The latter finds himself continually made most painfully aware of his own impotence and his dependence upon Nature and the knife, and never more so than in cases, like perforated ulcer or intestinal obstruction, where, helpless himself to do more than indicate the nature of the trouble, he has to leave it to the surgeon's skill to rescue the patient from imminent death. I do not make these remarks to belittle the physician—the very difficulties which beset him make his efforts so much the more arduous, so much the more admirable—but solely that we may recognise our limitations and be under no delusions as to our powers.

It is in the treatment of acute disorders that we feel, or should feel, our limitations most. The wisest treatment for most of them can be best summed up in the dictum; "Nature and the nurse."

Take the case of acute croupous pneumonia. The fact that so many different treatments are employed in this disease at once casts doubt upon the utility of any of them, and I am persuaded that we seldom cut short the attack or save life by adopting any measures beyond careful nursing. The cure, if effected at all, is effected by the great physician within, who has resorted to special means for destroying the pneumococcus, for carrying off the inflammatory products, for eliminating the toxins (as exemplified by the "critical evacuations"), and the like. I do not say that we may not sometimes help the vis medicatrix naturæ—far from it—and we may one day discover an antitoxin for pneumonia as efficacious as that employed in diphtheria, or some drug which shall be as effective as mercury or iodide of potassium in syphilis; but at present we have discovered neither the one nor the other. I am even prepared to admit that we may occasionally—though I believe it is very occasionally—save life by judicious bleeding, by cardiac stimulants, by oxygen inhalations; ice to the chest also may do good, chloral may help in delirium, and so forth. Nevertheless, we shall do well in all simple, uncomplicated cases of pneumonia if we content ourselves by merely relieving distressing symptoms, and I would only sanction specific treatment in those exceptional cases where it seems very definitely to be called for. My advice in this, and indeed in most diseases, is, "When in doubt leave all to Nature, and do nothing." As an instance of harmful interference I may refer to a hospital patient of mine in whom the critical fall of temperature was marked by a profuse diarrhœa. This the house physician checked, with the result that the temperature rose again to fall when the astringent mixture was withheld.

The second acute disease which I will mention is rheumatic fever. This, like pneumonia, is a germ disease, and we are as powerless to kill the germ of the one as of the other. I am doubtful whether our treatment for this disease is any better now than it was fifty years ago, or for the matter of that a thousand years ago, and whether, with the exception of those rare cases of hyperpyrexia where life can occasionally be saved by the bath, we have learned to diminish the mortality from this dread scourge of the human race by even 1 per cent. It was thought when salicylate of soda was first employed in rheumatic fever that the malady was to be henceforth robbed of its worst terrors. But what after 20 years' experience do we find? That physicians are divided into two opposing camps—the one holding that it is right and proper to employ the drug; the other that the remedy is in itself baneful and actually aggravates the morbid processes though it relieves the pain. I think for the purposes of my argument that we may fairly set the one camp against the other and regard the battle as a drawn one, which places us in much the same position as regards the efficacy of our treatment of the disease as we were 20 years ago. And what was the verdict then, and before then? The statistics of Gull and Sutton show that the patients did as well on peppermint water as on anything else.

I next come to typhoid fever. With Sir William Jenner's discovery the physician leaped at once, in the matter of the treatment of this complaint, from darkness into light. Sir William Jenner taught us the necessity of careful dieting and rest. Add to this the reduction of hyperpyrexia by suitable means and an occasional dose of calomel perhaps, and there is little more to be done in nine cases out of ten. I find that my typhoid fever mortality well bears comparison with that of other physicians, and the guiding principle of my treatment is, after taking due precautions, to leave the cure to Nature. I have satisfied myself that no drug has a specific effect

Finally, I will instance acute nephritis. To read the books one would fancy that we had made enormous strides in the treatment of this affection within recent years. I can only speak as I see, and my experience is that we have little or no control over it. Nephritis is presumably due to some toxin or toxins passing through the kidneys and exciting them into inflammation. But whence their origin, and how to prevent their production? Practically all we can do is to diminish the work of the diseased organs by limiting diet and getting the skin and bowels to act. No drug has the slightest effect on the morbid process. We may sometimes pull a patient through an attack of uræmia by bleeding, but after all is said and done the treatment of acute nephritis essentially consists of "Nature and the nurse."

I end, then, as I began. Our powers are limited, nor can we hope by even the most enlightened therapeutic measures to usurp the great prerogative of healing which Nature has so jealously reserved to herself. She is sovereign, and all that we can aspire to is to be her ready henchmen, alert to follow the slightest leadings she vouchsafes us, as we pursue our unwearying search after wider and more intimate knowledge of the laws by which she works, and through which alone we can participate in her victories over disease and death.

ADDENBROOKE'S HOSPITAL, CAMBRIDGE.—Mr. A. Peckover, Lord Lieutenant of Cambridgeshire and president of this hospital, has contributed another £1000 to its funds to commemorate the beginning of the new century.

DUNDEE INFIRMARY.—Sir Wm. Ogilvy Dalgleish, of Errol Park, who on several previous occasions has been a liberal donor, has again manifested his interest in this institution by announcing his intention to bear the cost, estimated at between £500 and £600, of structural alterations, additions, and improvements to the eye ward.

THE LANCET

Analytical Commission

ON THE

SCOPE OF ARSENICAL CONTAMINATION TRACEABLE TO IMPURE SULPHURIC ACID.

THE recently discovered contamination of beer with arsenic has opened a vista of interesting speculation as to what articles of food or drugs or materials in common use are exposed to the same risk of contamination. Arsenic has been found in a goodly number of things hitherto in which its presence can hardly be regarded as accidental. Arsenic in wall-papers, for example, was used as a colouring agent, and the poisonous metal was found in green candle-shades, in green Christmas candles, in carpets, in book-bindings, and in a number of other articles in which its green was employed as a necessary part of the colouring agent. It soon appeared that arsenical pigments were the source of grave danger, and in response to repeated demands in THE LANCET and other journals arsenic was abandoned as a colouring agent, at least in those materials—such as wall-papers—which are likely to have an injurious effect upon health. Traces of arsenic have been from time to time reported in certain dyed fabrics. The arsenic present was attributed to its use in the preparation of the dyes and the quantity found was invariably small. This accidental occurrence of arsenic in dress and other materials, is, however, of interest in relation to the present panic which exists as to the widespread possibility of arsenic being present in beer. In beer, arsenic is obviously an accidental impurity. As is now well known, the arsenic had its origin in the impure oil of vitriol used for preparing the sugar for brewing purposes. It is remarkable that even in view of this origin the quantity of arsenic which found its way into beer should be, relatively speaking, large, especially when we consider that the sulphuric acid employed for the conversion of starch into glucose or cane sugar into invert sugar is used in a diluted state. One point, however, which appears to have escaped notice so far, is that arsenic forms a definite compound with sulphuric acid which is decomposed on the addition of water into white arsenic and sulphuric acid. We know of an instance where crystals of white arsenic had deposited in considerable quantity in a carboy which had contained commercial oil of vitriol and to which water had been added.

The extent to which oil of vitriol is used in the manufacturing processes of this country is enormous. It has indeed been said that our commercial prosperity could be accurately gauged by the amount of sulphuric acid consumed in this country. The use of sulphuric acid is associated with the production in many instances of articles of food, or at any rate of substances which are taken into the human economy, while materials of familiar daily use are at some step or other in touch with sulphuric acid in the course of their elaboration. Malt substitutes used for brewing beer are perhaps the best examples of substitutes used ultimately for human consumption which are prepared by the agency of sulphuric acid. The function of malt diastase is to convert the starch of the barley into malt sugar ready for fermentation. Sulphuric acid is more commonly employed for the same purpose—converting cheap starches or cane sugar into the fermentable invert sugar. It happens that sulphuric acid is liable to contain arsenic from the pyrites from which the acid is produced, and thus arsenic has found its way into substituted sugars and so into beer. Apparently, the fact that sulphuric acid is used in the production of so many articles of everyday use, including food and drugs, is not very generally recognised. Not many months ago arsenic was found in an effervescent powder largely composed of phosphate of soda, and the presence of the poison was traced to the use of sulphuric acid in the preparation of the phosphate crystals. It must be realised, however, that arsenic may occur in a number of materials in the preparation of which at some time or other sulphuric acid is concerned. Such are, for example, boric acid, oleic acid, soap, blacking, glycerine, citric acid, tartaric acid, salicylic acid, Glauber's salts, alum, effervescing salts, commercial manures, and so on. All these substances may at some time or other in the course of preparation be in contact with sulphuric acid, if, indeed, the final product does not actually contain the acid itself. It follows that arsenic may occur in tobacco, including cigars and cigarettes, jams, sweetmeats, lemonade, liqueurs, and many effervescing medicinal salts. Tobacco may contain arsenic from the glucose or glycerine used as a sweetening agent. Jams, sweetmeats, lemonade, and liqueurs may contain arsenic similarly from glucose possibly used in their manufacture. Most blacking is made with, and generally contains, free sulphuric acid. Citric acid and tartaric acid are made by decomposing the lime salts obtained from lemon-juice and grape-juice respectively with sulphuric acid. Boric acid and salicylic acid are obtained in a similar way. Glauber's salts, or sulphate of soda, a popular and cheap form of purgative, are obtained by acting upon common salt or nitre with sulphuric acid. Alum is produced by acting on clay with sulphuric acid. Oleic acid is prepared also from fats, frequently by the agency of sulphuric acid. In a similar way the presence, if any, of arsenic in soap might be traced to the sulphuric acid employed at some time or other in the course of manufacture. Commercial manures and fertilisers are almost invariably made by acting upon bone ash with sulphuric acid, thus rendering the phosphoric acid soluble and available for plant assimilation. These speculations have led to the present inquiry, and our Commissioners have during the past few weeks procured a number of articles of the above type and have submitted them to careful examination with a view to deciding whether or not arsenic occurred in them.

Tobacco, Cigars, and Cigarettes.

It is well known that glycerine or glucose is added to tobacco to give substance to the cut leaf. We examined a number of samples of sweetened tobacco but without getting the slightest indication of arsenic.

Blacking.

Arsenic was found in mere traces only in blacking. In any case the presence of arsenic in small amount would not matter much in blacking.

Sweetmeats.

A number of sweetmeats were examined but not a trace of arsenic could be found in them. Similarly several fruit jams when examined for arsenic gave negative results.

Lemonade.

No arsenic was found in several samples.

Liqueurs.

Sugar, of course, is a large constituent of liqueurs, and it might be glucose. Of two liqueurs examined we could not find a trace of arsenic in either sample.

"Lemon Crystals."

These are largely employed for the preparation of an acidulated beverage. We could find absolutely no arsenic in the samples examined. Arsenic in lemon crystals might exist in the sugar, tartaric acid, or citric acid.

Acids.

Specimens of citric acid and tartaric acid as ordinarily sold in the shops were likewise submitted to examination for arsenic, but in no case could the slightest trace of arsenic be found.

Soap and Oleic Acid.

Specimens of common bar soap were found to contain just a trace of arsenic, but no arsenic was found in oleic acid.

Effervescing Salts.

Specimens of natural Carlsbad salts were obtained, but in no instance was arsenic found in them. In two specimens of artificial Carlsbad salts arsenic was definitely discovered in one. It may be referred probably to the use of common sulphate of soda or Glauber's salts. In the samples of effervescing citrate of magnesia examined no arsenic was found.

Glauber's Salts.

Distinct evidence of arsenic was found in the crystals examined.

Artificial Manures.

Arsenic in very distinct quantity was invariably found in the specimens of artificial manure examined. This is hardly surprising since artificial manures commonly consist of the so called superphosphate or soluble phosphate of lime made

by adding common oil of vitriol to bone ash. The question has been raised before as to the possibility of these fertilisers infecting plants or roots with the arsenic contained in them. We refer to this portion of the inquiry in particular because recently it has been freely stated that arsenic has been found in malt and hops and in beer brewed entirely from malt and hops. It is possible that the arsenic thus said to be found may have another origin, but the fact remains that plants do assimilate arsenic and that artificial manures are frequently arsenical, and a very wide field for inquiry is opened thereby. Some years ago Dr. Edmund Davy positively stated that arsenic as it exists in artificial manures is taken up by plants growing where these manures have been applied. He found cabbages and turnips taken from fields manured with superphosphate giving unmistakeable evidence of being arseniated. In some experiments conducted by the late Professor Tuson of the Royal Veterinary College the results were such as to confirm the assertion of Dr. Davy. Also a French investigator came to the same conclusion. Professor Tuson regarded these facts as having some important bearing, for as arsenic is well known to accumulate in soils, the effects after some time might possibly be that vegetables raised on those fields continuously so manured would ultimately be found to contain a proportion of arsenic able to exercise an injurious effect on the health of men and animals. It would be rash to assert that the arsenic which has been found recently in malt and hops owed its origin to this source, but the point is well worth attention at the present juncture that artificial manures are often rich in arsenic and that plants will easily assimilate this poison.

It will be seen that the foregoing results are reassuring. For in spite of the fact that the substances which have been examined are most probably at some time or other in the course of their preparation submitted to the action of sulphuric acid, yet arsenic as an accidental impurity was, on the whole, not found to be present even in infinitesimal quantity. If sulphuric acid had been employed at all in the instances quoted it was pure. Certain substances did contain arsenic, although in unimportant quantity. The inquiry teaches, however, that as these things are liable to contain this poisonous impurity a careful watch should be kept over them. This is provided for in the Food and Drugs Act, which might usefully be turned to the examination of such articles of food and drugs as are herein indicated. The danger involved by the use of sulphuric acid in the manufacture of all compounds intended for human consumption can be obviously avoided by the use of pure sulphuric acid, and some rigid precautions are necessary which shall ensure the supply of arsenic-free sulphuric acid for these special purposes.

We may add, finally, a word on the tests employed for the detection of arsenic. Considerable controversy has arisen as to the respective merits and demerits of the various tests for arsenic. In our experience the Gutzeit test is the most satisfactory for qualitative purposes, and to some extent for quantitative purposes also, so long as special care be taken to absorb any sulphuretted hydrogen that may be evolved. It has the advantage over the Reinsch test of giving indication of the presence of arsenic even if it be in the form of arseniate or arsenic acid. Reinsch's test is not at all satisfactory when the arsenic is present in the form of arseniate or arsenic acid unless steps be taken to reduce the arsenic to the arsenious state. Sulphur compounds again seriously interfere with the Reinsch test, sulphur depositing upon the slip of copper and complicating the result. All fallacy, however, may be got over by first oxidising the liquid, such as beer, which frequently contains sulphates with a little excess of bromine, driving off the bromine and then reducing the arsenic by the addition of some cuprous chloride solution. If arsenic is present the liquid will yield an immediate deposit on the copper on boiling after acidulating the liquid with hydrochloric acid. The Gutzeit test is best conducted in a six ounce flask fitted with a small glass tower containing filter paper saturated with acetate of lead. Over the top of the glass tower is placed a piece of filter paper moistened with strong mercuric chloride solution and afterwards dried. The production of a yellow stain in intensity varying directly with the amount of arsenic present is a certain indication of arsenic when the precautions indicated are taken. Complex liquids like beer may be first evaporated with sulphuric acid and most of the charred material destroyed as in the Kjeldahl process for the estimation of nitrogen. The acid liquid may be filtered if necessary or it can be carried to a clear state by continued heating. It is then transferred to the flask in which the hydrogen is generated by the action of acid upon pure zinc. Arseniates and arsenic acid respond to this test most distinctly in a few minutes. By attaching a small glass tube to the tower the result may be confirmed by obtaining the black arsenical deposit as in the case of Marsh's test.

The Lancet Laboratory.

THE WAR IN SOUTH AFRICA.

THE news from South Africa is of a very mixed and not altogether satisfactory character. Nor is it likely that anything short of the capture of De Wet and the complete and final dispersal of his forces will make it otherwise. The occupation of all the stations along our lines of communication by strong bodies of infantry to guard against attack, while bodies of mounted troops are actively pursuing and dealing with the Boer forces may result in this. The most unsatisfactory part of the news at the moment is that the Boers are raiding Cape Colony. We must, presumably, make up our minds that the guerilla war will pursue its course for a time, giving rise to surprises, small disasters, and "regrettable" events. The wide extent of territory to be held and safeguarded against attack, as well as the distances over which the operations are spread, will probably require the presence of larger mounted forces than are at present in the field. The Colonial Governments, we are proud to say, are showing themselves alive and equal to the situation; that of New Zealand, for example, is taking up steamers for the conveyance of a fresh contingent of troops to South Africa.

We regret to notice that enteric fever is still very prevalent, and that it, together with dysentery and other camp diseases, gives rise to numerous deaths. Nor is this to be wondered at considering that a recrudescence of enteric fever was only to be expected, as we have already foreshadowed, on the approach of warmer weather.

Further reports respecting the Imperial Yeomanry Hospital at Deelfontein from Lieutenant-Colonel A. T. Sloggett, R.A.M.C., show that on Dec. 10th there remained in hospital 17 officers and 443 non-commissioned officers and men, of whom nine officers and 322 men belonged to the Imperial Yeomanry. Colonel Sloggett adds that Surgeon-Dresser Ransford, of the hospital staff, and Nursing Sister Timbrell, of the Pretoria staff, were both convalescent, and that Surgeon-Dresser Blathwayt, of the Deelfontein staff, suffering from enteric fever, was progressing favourably. There had been a decided increase of enteric fever of late. Surgeon-Major C. R. Kilkelly, of the Grenadier Guards, commandant of the hospital at Pretoria, announced on Dec. 5th that there remained in the hospital 55 officers and 388 non-commissioned officers and men. A convoy of wounded from Bronkerspruit, consisting of 11 officers and 20 men, had just arrived.

DENTAL SURGERY WITH THE FIELD FORCE IN SOUTH AFRICA.

BY F. NEWLAND-PEDLEY, F.R.C.S. ENG., L.D.S.,
RECENTLY DENTAL SURGEON TO THE IMPERIAL YEOMANRY HOSPITAL AT DEELFONTEIN.

The following record of my experiences, which was written whilst I was on service in South Africa, is intended to indicate the defects of our military system as regards the care of our soldiers' teeth. For reasons that will be easily understood I deferred the publication till a more suitable time than that of my actual service.

Early in February, 1900, I left England with the staff of the Imperial Yeomanry Hospital as a consulting dental surgeon to treat the special cases of injuries and diseases of the jaw, and for nearly six months I worked under varied conditions—on board ship, in a tent, afterwards in a shanty, and subsequently in a hut. Here I settled down into a daily routine which little resembled what I expected to do, but which seemed to meet the requirements of a large camp as far as the work of one dental surgeon can be said to supply the needs of a general hospital.

Occupation for me was never lacking from the first day of the outward voyage, for there was the usual epidemic of influenza followed by numerous cases of neuralgia and

toothache. I had to attend patients nearly every day, although I had only a few instruments available. I managed to do some temporary fillings and some extractions, including a badly impacted wisdom tooth. The patient was an officer who was suffering from trismus, and as he was just recovering from an attack of bronchitis ether was unsuitable as an anæsthetic; so, much against our inclination, we had to give him chloroform in his bed, and in dislodging the impacted tooth I had to rely exclusively on sense of touch.

After two days at Cape Town we were ordered to Deelfontein, which is nearly 500 miles north of the Cape. I had a world of trouble in taking my two or three tons of equipment with me, and when I arrived at the camp we were all under canvas and it was premature to unpack instruments of value. We had quite enough to do to keep ourselves dry and to prepare accommodation for expected patients. Even whilst we were living in tents there was something for me to do in seeing urgent cases of dental trouble, especially amongst the sick. Under such circumstances one cannot do much beyond extractions, and I had to seat the patient in a deck chair and support his head against the tent pole by way of securing a fixed point. At this period the newspapers announced that there was a dental surgeon in our camp, and applications soon poured in from all sides for dental treatment, but I could do little for the applicants as I was unwilling to unpack good instruments before I had a water-tight roof. By way of a temporary resting-place I was promoted to a shanty 10 feet square with a tarpaulin roof. This dear little place, which subsequently became a mortuary, I used for a time as a dental surgery and also as the office of a camp journal which I started under the title of the *Devil's Fountain*.

On March 25th a complicated fractured jaw case arrived and as it was necessary for me to unpack my workroom appliances in order to construct a special splint I was moved into a hospital shed which I converted into a work-room and bedroom combined, and I had the use of the second or reserve operating-theatre of the hospital for my consultations and operative work. The workroom was 27 feet long and 16 feet wide, and it was constructed of sections fastened together with bolts and nuts, so that it could be readily taken down and put up elsewhere if desired. Each section was 8 feet long, 5 feet 6 inches wide, and 4 inches thick, and it consisted of an outer layer of galvanised iron nailed on to a rough wooden frame and lined with deal boards. It was lit by four windows, each 3 feet 6 inches by 2 feet 6 inches. These huts, or sheds, were much cooler than tents in summer and were a much better protection against rain. For winter they were rather too well ventilated, as there was an open space of four inches all round the eaves, and there were about 50 large square holes in the woodwork where the sections were bolted together. A fine breeze blew upwards between the floor-boards and there was a wide chink round the floor which admitted a further supply of fresh air. The cost of a similar shed better made and finished would be about £50 in England, but these sheds were made in Cape Town and were inferior in every respect to the English huts excepting in the matter of mobility. The draught under the boards could be reduced by piling earth round three sides of the foundation, and the industrious person who had the foresight to bring his own carpenter's tools could quickly exclude the frosty night air. With these slight improvements the shed made a very suitable workroom and here I set up a casting bench, a plaster bench, and a jeweller's bench, with vulcaniser, lathe, and all necessary appliances. A smaller room would be sufficient for a workroom if additional space were afforded for storage and for a bedroom, but in a country where commandeering is recognised as a fine art and tools are in great request the dental surgeon who elects to combine his sitting-room, bedroom, and store-room with his workroom is wise. I covered the ugly walls with numerous prints and engravings, many of which I framed (see Figure). This kind of workroom may be considered perfectly satisfactory for two or three mechanical assistants, in addition to which there is space for one bed 2 feet 6 inches wide.

Dental workroom at the Imperial Yeomanry Hospital, Deelfontein.

My operating and consulting-room adjoined the operating theatre and x ray room, and could be used at any moment as a second surgical theatre if it were necessary to perform two

operations at the same time. The room was 19 feet by 16 feet, and was lit by seven windows. An attempt at top-lighting had been made, but it could not be said that the light was really good for dental manipulations. In this room I placed an operating chair, a dental engine, and all the instruments, appliances, and materials that I required for practice. There were, in reserve, a second engine and two more operating chairs for the use of possible assistants. I worked strictly by appointment for all cases requiring fillings, and the ophthalmic surgeon was kind enough to give gas every day at 11.30 A.M. punctually. Some surprise may be felt that one should give gas to a soldier for the extraction of a tooth—and it would not be necessary if the patients were not sick, but hundreds of them were recovering from typhoid fever and dysentery, which left them in a very weak state. A man with nine bullet-wounds, who was known amongst his friends as the man who stopped a whole volley, was a very brave fellow, but he was glad to take gas for a severe extraction. A patient was sent to me with a history of thoracic aneurysm and I decided to use gas in the extraction of an aching tooth, believing that the pain of the operation would be more dangerous than the anæsthetic. An appointment for the next day was made with Mr. L. V. Cargill and the surgeon in charge of the case, but the aneurysm ruptured into the œsophagus during the night and the patient died.

The work required of me at Deelfontein was little more than the work of a dental practitioner and I only had a very few severe gunshot cases which I treated in conjunction with Mr. Alfred Fripp. Gold fillings are rarely necessary in a military camp, but the percentage of exposed pulps is very high, as nearly every patient would rank as a neglected case. Disease, neglect, tough beef, and hard biscuit play havoc with the teeth—one young man had only three useful teeth left. How such patients recover from typhoid fever and dysentery is a mystery. They are of no further use as fighting men under the present *régime*, for they cannot eat service food. Nothing is done to preserve the soldier's teeth whilst he has any and when they are gone he must go home as a man unfit for service. It would be better and quicker to put a soldier's teeth in order than to train a fresh man as a substitute for the invalid. The officers suffer with their teeth after a few months' campaigning, and I hear on the best authority that there were at one time at Modder river 80 officers requiring dental attention and they sent to Cape Town for a dental surgeon. Unfortunately, they were again on the march when he arrived.

The selection of cases for hospital treatment and the limitation of work was most perplexing, and without the exercise of a good deal of discretion the dental surgeon in such a situation will find himself attending the patients who have the least claim on his time. I thought that some patients who were able to go to Kimberley or Cape Town might be recommended to consult practitioners in those towns, for there were in the beds of the Imperial Yeomanry Hospital a great many more patients than I could attend.

TO SAVE THE TEETH OF AN ARMY.

One is compelled to face the question, Can nothing be done to save the teeth of an army? and regarding my appointment as being somewhat of an experimental nature I think I should be fulfilling the wishes of those interested in the welfare of our brave "Tommies" if I were to attempt to devise a scheme under which the army in time of war could be provided with dental practitioners. I purposely allude to war times, for if it can be shown how to deal satisfactorily with the teeth of an army threading its way over 1000 miles of South African territory it will be comparatively easy to attend to the soldiers' teeth at home. At first sight it might seem desirable to attach a dental surgeon to each regiment, brigade, or division. Experience in South Africa, however, has left no doubt in my own mind that it would be better to make such appointments to the general hospitals, and perhaps to the stationary hospitals also, where the transport rations and sleeping accommodation for two or three such dental officers could easily be added to that already required for the staff of 21 medical officers. Each of the numerous general or base hospitals in South Africa should have been provided before it left England with a dental unit consisting of one dental surgeon and two senior dental students as assistants. In Deelfontein it would have been impossible for me adequately to tackle the dental work of our 1000-bedded hospital without at least two assistants. What must the condition have been in th general hospitals at Cape Town, Kimberley, Naauwpoort, and Bloemfontein? My chief experience was drawn from our camp of 1000 souls, but in the latter place alone there were 5000 sick in hospital, to say nothing of the 30 000 troops left encamped there after Lord Roberts moved north with the bulk of his army. At each general hospital there should be an operating-room with three chairs and a workroom for the construction of special appliances and dentures. Each stationary hospital of 200 beds should similarly have a dental surgeon upon its staff, but workroom appliances are cumbrous and heavy as compared with surgical instruments, and all patients requiring dentures should be sent to the general hospitals. The dental units should be supervised by the chief dental officer at the base in the same way that the principal medical officer supervises all medical units.

To meet emergencies and the requirements at the actual front—as, for example, after a great battle or during a protracted halt of the army—the principal dental officer should have a small reserve of dental officers who could be drafted to any point on the receipt of the necessary intelligence from headquarters. The equipment of the dental officers who were sent to the front would, of course, be as light as possible. The dental engine packs into a small space and all the necessary instruments and materials would go into a case one cubic foot in measurement. Dental officers at the front could obtain additional supplies if necessary from the nearest general hospital. No special operating chair should be taken to the front; all that is necessary is a portable headrest that can be fixed on to any chair. In large hospitals portable operating chairs weighing 80 pounds each and costing seven guineas would be useful, and a strong operating chair for anæsthetic operations would be desirable in addition.

The manner in which the dental officers are to be found and some indication of the expense may now be given. I believe that dental surgeons to act as heads of units could be obtained in any war on similar terms to those which were given to the civilian medical officers in the present war. Every unit would thus contain one good dental surgeon who should preferably be a teacher from one of the dental schools. Two senior dental students who would act as dental assistants to him would easily be obtained at very small expense, and it would be better if the dental surgeon were allowed to select his own assistants. When I was leaving England I obtained a list of the names of my pupils who would follow me to act as assistants or dressers, and at least a dozen gave in their names. The conditions arranged were that each of them would serve for at least six months, receiving a first-class passage and maintenance in any hospital to which they might be attached, together with remuneration at the rate of £75 per annum as pocket-money. Each student was to bring his own dental engine and student's set of instruments, the value of which would be about £30. I communicated with the Royal College of Surgeons of England and they undertook to recognise six months' service in South Africa as the equivalent of a like period spent in a hospital at home. At the Imperial Yeomanry Hospital we had a suitably equipped workroom and operating-room, so that if it had been desired to test the work of a dental unit in a general hospital it would only have been necessary for the War Office to sanction the sending out of two of the pupils whom I selected. I applied for these assistants and I had more than enough work for them. The committee in London who manage the affairs of this hospital acquiesced in my request for them to be sent, of course at the expense of this hospital and not at that of the War Office; but the latter absolutely refused to endorse the appointment of more than one dental attendant to this British army of about 200,000 officers and men. My chief wonder is that Mr. Fripp succeeded in getting them to allow even that one to be included in the staff of the Imperial Yeomanry Hospital.

ROYAL BRITISH NURSES' ASSOCIATION.—The offices of this association have been removed to new premises at 10, Orchard-street, Oxford-street, W., where all communications for the future should be addressed. On Jan. 17th Mrs. Humphrey Ward will open a discussion in the new rooms of the association on the Education of Crippled Children in which the matrons of various children's hospitals will take part. Tickets may be obtained from the secretary.

BOROUGH COUNCILS AND THE HOUSING OF THE DISSOLUTE POOR.

WITH the new year the new borough councils will have got sufficiently into harness to commence their work of local administration and reform. They are intended to replace the old, and in too many instances, the effete, vestries; and for this purpose they have been armed with more extensive powers and endowed with higher dignity. The Londoner waits anxiously for some good result.

Of all the questions which demand immediate attention and action the housing problem stands first. Past experience is not encouraging, for the grievance is becoming more and more acute and it is the deserving as well as the undeserving who now suffer. It is not only the poor but the comparatively well-to-do artisan who cannot find a suitable home. Though from a sanitary point of view it is the thriftless, the filthy, the vicious, and the intemperate, who create the greatest danger of epidemic disease, from the political and social point of view the fact that more worthy members of the community are in great difficulties is likely to have influence in determining the local authorities to take action. Thus it must be hoped that the agitation arising from the suffering of a better class may help to bring relief not only to themselves but to those who are even less fortunate. Nevertheless it will be necessary to bring much pressure to bear, for past experience has shown how evils accumulate more rapidly than improvements are effected. When we remember that 16 years have already elapsed since one of the most weighty of Parliamentary commissions ever held reported on the question of the housing of the poor, and that comparatively little has yet been done, apprehensions as to the slowness of future progress may well be entertained. It is against further delay that we must act with all possible energy. Six years elapsed before the work of the Royal Commission of 1884 was embodied in the Housing of the Working Classes Act of 1890. Then it was thought that by the creation of a county council for the metropolis a local authority would be brought into existence that would be better able to apply the provisions of this Act. But that, again, required much time and the London County Council did not for several years fully realise the powers it possessed. It is maintained that the Council at first did not appreciate the importance of Part III. of the Act, which embodies Lord Shaftesbury's Act of 1851—a good law badly or feebly applied. The Council then studied in preference Parts I. and II. of the Act, under which the land acquired by the local authority must be sold, while under Part III. the local authority may retain the property. As it had been reported to the Council that 214,840 persons were living in one room, and that 128,000 families of from four to twelve persons had not more than one room, the necessity of taking action was but too evident. It was likewise stated a few years ago that the artisans' dwellings companies had ceased building, so that matters were drifting from bad to worse. This of course was a state of things shocking to contemplate.

As a remedial measure the Housing Committee of the London County Council gave details concerning 30 plots of vacant land within the boundaries of the metropolis which might be bought. They also now began to insist on the value of Part III. of the Act. About a million sterling has been spent to purchase and pull down insanitary property, and model dwellings have been raised instead of old rookeries, but the tenements thus brought into existence contain about 4000 persons less than those which were destroyed. This is a great sanitary improvement but it does not relieve the pressure on house space. To further complicate matters there were differences of opinion between some of the local vestries and the Council. At least one vestry was anxious that the Council should deal with their insanitary areas under Part III. of the Act, that it should acquire the property and put it all in order. The Council, on the other hand, was not particularly anxious to assume such responsibilities in regard to houses that had no structural sanitary defects and replied that the grievances might be dealt with by vestries by more energetic inspection under their by-laws or under the Public Health (London) Act of 1891. Whatever may be the merits of this contention it has been definitely set at rest by conferring on the borough councils themselves the right of applying Part III. of the Act to their own district. They can, therefore, now do what their predecessors, the vestries, asked the London County Council to take in hand, so that if it be true that the impediment in the past has been the slowness of action of the Council this need not affect the future.

The borough councils, however, will now have to examine with the greater care that responsibility engenders whether the vestries were always right when they desired to see Part III. of the Act applied to insanitary areas. The problem is complex and a remedy suited to one insanitary area does not apply to another. The question in some localities is whether a high death-rate alone suffices to qualify houses as insanitary. Some of the highest death-rates occur in houses that cannot, as dwellings, be qualified as insanitary. The streets are broad and there are wide open spaces and big yards behind the houses. The rooms are lofty, the houses are modern, and the drainage if anything is above the average, the drains being carefully trapped and ventilated. Perhaps the subsoil may be at fault or the street sewers may be of insufficient gradient to be self-cleansing, though these are defects that would not be altered by the municipalisation of the houses. Yet death-rates that exceed 40 per 1000 per annum occur in such dwellings. Topographical conditions and bad street sewers may account for some of the ill-health prevailing, but it is self-evident that the principal causes are the habits of the people themselves and overcrowding. This is not a theoretical contention, there is practical proof of its truth. In the same streets there are common lodging-houses and there the death-rate and the sick-rate are somewhat lower. On the other hand it may justly be argued that this would inevitably be the case as there are fewer children in common lodging-houses than in tenement houses; but against this argument it can be maintained that though there are fewer children, on the other hand the inhabitants of the common lodging-houses are poorer and endure greater privations than those of the tenement houses. One thing, however, is certain—namely, that the common lodging-houses are much cleaner than the private tenement houses, even when the latter, being registered, are open to constant inspection. The contention is that in some districts the inspection of registered tenement houses has not been carried out properly; and it is said that the vestries, instead of asking the Council to buy up this property, should have appointed more inspectors and have kept it under better control.

There can be no doubt that many more inspectors are needed; but the most elaborate system of inspection will not alter economic conditions. The application of Part III. of the Act may contribute to this result; the action of inspectors might, if anything, aggravate the economic difficulty. In more than one specially insanitary area there stand side by side common lodging-houses and registered tenement houses. The old Common Lodging-houses Act applies to the former, the only alteration being that the inspectors are now under the London County Council instead of under the Metropolitan Police. The staff of inspectors is numerous, the most rigorous control is exercised, and the inspection is so frequent that cleanliness is maintained and overcrowding is prevented. In some cases a common lodging-house and a registered tenement house are owned and managed by the same proprietor; they are sometimes in the same street and stand side by side, yet there is no fault to be found with the one, while the other is overcrowded, filthy, and in a deplorable condition. It seems quite natural to conclude that the one inspected by the London County Council inspectors is well inspected and the other badly inspected. The borough councils are, therefore, urged not to follow the parsimonious policy of the vestries but to appoint a much larger number of inspectors. Unfortunately, it does not follow that what is successful with regard to common lodging-houses would be equally effective with regard to the registered tenement houses. The position socially and economically is different. The common lodging-houses are inhabited mainly by single men, single women, and a smaller number of adult couples; the tenement houses, on the contrary, are to a large extent occupied by families. It is the children who very generally cause the overcrowding, who add to the foulness of the atmosphere, and who certainly do not help to keep the rooms clean and tidy. Many of these tenement houses are not structurally

defective. It is the dirt and the overcrowding, the vicious lives, the insufficient food and clothing, &c., which are the principal causes of the high death-rate. To improve these conditions would mean that more money must be spent; and where is the money to come from?

This is the point where the advocates of the application of Part III. of the Act step in. They say that the high death-rate is a sufficient reason, without there being structural sanitary defects, to justify the sanitary authority, whether county council or borough council, in acquiring the property. It is not proposed that in every instance the houses thus purchased should be pulled down and rebuilt. The first of all necessities is to reduce the rents, and a municipal authority could afford to let two rooms for the price now charged for one room. But if this were done, where to-day we have two tenants each renting a room one of these tenants would have to go away so that the remaining tenant might have two rooms instead of one. This might be met either by building new houses on vacant sites or by making better use of some of the space now built upon and erecting in the place of existing small cottages large tenement model dwellings. In all this the first thing to be done is to reduce the rents and to increase the accommodation. Then, and after that is accomplished, it will be necessary to have a very constant and elaborate system of inspection. However cheap the rents may be, there is no inconsiderable section of the population which will still continue to overcrowd and to live in filth, if they can save any rent money to spend in some form of dissipation or enjoyment. But this must be prevented by the strong arm of the law. If the local authorities incur the responsibility and expense of carrying out large schemes for the rehousing of the poor it is for the purpose of preventing overcrowding and insuring cleanliness. It is at this stage that inspection will produce the best results. But at present what is an inspector to do?

We have visited at one time or another not a few of these insanitary areas and we cannot better illustrate the difficulties than by describing some cases. In the small back first floor room of a house originally built to accommodate one single family we found a woman and her husband. The man was a coachman, but being addicted to drink he had been discharged and was out of work. The woman was just recovering from a dangerous attack of pleurisy, and had also suffered from erysipelas. She was able to make dresses and she sewed very well, but in consequence of her illness and the bad repute of the street in which she lived, she could not get any work. The couple were simply starving. They had seen better days and they confessed to have fallen in the main through their own fault, but this did not lessen the difficulty. Indeed, the fact that the people are themselves often very much to blame only adds to the complications of the problem. They paid 4*s.* 6*d.* per week for their very small room; it was supposed to be let furnished with all necessary utensils. These necessary utensils consisted of a saucepan with three holes in it and a kettle without a spout. The bed, with several of the laths broken, stood by the window. One of the panes of glass had been broken, so that for some time the bedclothes were damp with the rain that came through. Now the window had been repaired, not by putting in a new pane of glass, but by sticking fragments of glass over the broken part of the old pane. The sheets of the bed, provided by the landlord, were well-nigh black, and the tenant explained that if she washed them herself she had to wait till they were dry and to sleep without sheets in the meanwhile. Now if by constant inspection the landlord was made to furnish this room properly, would he not increase the rent? Again, if the bedding and the utensils were in a better condition might not the tenants be tempted to pawn or sell some of them? In another small back room we found a woman suffering from pulmonary tuberculosis. Her husband tried to make a little money by selling in the streets some lamp-glass cleaners of his own manufacture, but being lame, he found it very painful to stand about. Here again the rent was 4*s.* 6*d.* a week and it was evident that these people were rarely able to obtain sufficient food. In a large front room there was a woman with so numerous a family that complaints had been made against her of overcrowding. She then sent two of her boys to a neighbouring common lodging-house, but they met such rough company there that she finally took a second room in the house and had to pay 9*s.* a week rent for the two rooms. How was this to be done now that her husband, a labourer, was out of work?

To attack these people for overcrowding when they are already starving themselves so as to pay extortionate rents does not seem a very humane or a very practical proceeding. But if these houses, instead of being in the hands of persons who unscrupulously speculate on the misery of the poor, were owned by the borough council they might be kept clean, be simply but properly furnished, and be let out at much lower rents. They would however, require very keen and constant supervision and the question is whether, in the face of such control, the same dissolute class of people who now inhabit them would remain. If they did not then it would simply mean that the difficulty would be transferred to some other locality. In Fulham we came across a case in point. A woman, her husband, and some of her children slept in one room. Then she had on the staircase landing a sort of lumber-room, in which she managed to squeeze a bed and one chair. Here three of her children slept. A sanitary inspector warned her against overcrowding, so she sent two of her children to sleep with a friend who lived in the same street, and where there was more room. The sanitary inspector imagined that he had put an end to the overcrowding; but no sooner had he expressed his satisfaction than she secured two lodgers, journeyman bakers, who came in late at night and left early in the morning, and were able to sleep in the little room without attracting any notice. This is the sort of thing that will constantly occur. If a family are all living in one room to-day, and in the course of time, through the benevolent action of a borough council, they are given two rooms for the same rent, the chances are that they will sublet the second room and continue to overcrowd just as before. Then it is that strict inspection will be necessary to find all this out and prevent its occurrence. But while the extreme poor are called upon to pay, as in the typical cases described, 4*s.* 6*d.* for a small back room, 6*s.* for a larger front room, and 9*s.* per week for two rooms, one small and one large, it is scarcely fair to complain of overcrowding, for we must take into consideration that many of these people consider themselves fortunate if they earn 12*s.* in a week. Many sell flowers, toys, and other objects in the streets, or live by petty thieving; a more skilful or a professional thief is often better lodged. The women sometimes belong to the lowest class of prostitutes, and whatever may be the expedients by which they live, it is quite certain that they cannot afford to pay high rents. Yet it is precisely this class that pays, in proportion to the accommodation received, higher rents than any other class of the community. The more dissolute the class the higher the rent charged by those who cater for them.

Of late years the problem has presented itself in a comparatively speaking novel aspect. It was supposed that the lowest class lived in low-class dwellings that were so insanitary and dilapidated that the first thing to be done was to pull the houses down. In many instances this is no longer the case. They, on the contrary, live in modern houses of the middle-class type that possess no structural defects and are well drained. But the tenants overcrowd these houses, and such is their poverty, and their dissolute, drunken, dirty habits, that in spite of good drainage and good houses the death-rates in certain areas of this description are generally above 40 per 1000 per annum and have sometimes exceeded 50 per 1000. It is proposed to make this high death-rate the pretext for municipalising such property; but if the compensation given to the owners of such property is sufficiently high, will not this constitute a premium to those who allow their property to be degraded by the advent of tenants of this class? Are borough councils competent to become the landlords of the most dissolute and unmanageable section of the community? It is a heavy responsibility, though it is difficult to see by whom else the work can be undertaken. The London County Council shrank from the hazards of such an undertaking: will the borough councils display greater courage and enterprise? If the rents are to be reduced—and surely they must be reduced—the profits will be too small to tempt private enterprise. At first the strict regulations and the constant inspection that will be necessary to keep such property in order will have a tendency to drive away the more dissolute among the tenants. They will prefer to pay higher rents to the private speculator who will allow them to overcrowd and to wallow in the dirt which they often much prefer to cleanliness. But when the local authorities are able to provide, at low

rents, proper accommodation they will then be justified in prosecuting those who prefer to live in insanitary conditions.

High rents are as effective a cause of high death-rates as defective drainage, since the high mortality occurs where the drainage and structure of the houses are not at fault, where the streets are broad and the open spaces behind the houses are ample. Of the submerged, those who have sunk deepest in the mire stand first in need of municipal intervention on their behalf. It is in catering for them that private enterprise has most conspicuously failed and therefore municipal enterprise would be most justifiable. Private enterprise only succeeds because it tolerates overcrowding. Private enterprise which only prospers by breaking the law may well be suppressed. If it can compete with municipal enterprise that observes the law, well and good, if not, it does not deserve to exist. Private enterprise subdivides into tenements a house worth £40 a year and charges £90 a year to the sub-tenants. Municipal enterprise need not charge more than £40 or £45 a year for the same tenements, and it can do this without increasing the rates. Why, then, should London wait? All that is necessary is to so arrange matters as to prevent the payment of such exaggerated compensation or purchase money as would handicap municipal enterprise by entailing too large an expenditure of capital. For instance, if a house worth £40 a year brings in £90 a year because it is subdivided into small tenements and overcrowded by the lowest class of tenants the compensation for expropriation should be estimated on the £40 annual valuation and not on the £90. On this basis the rehousing even of the poorest and the most dissolute class could be made to pay, and from the sanitary point of view it is for this class that action is most urgently needed. From the moral point of view, though some of these people dearly love the dirt and disorder in which they live, others, on the contrary, would eagerly profit by any opportunity of raising themselves. In this cause, therefore, the social reformer and the sanitary reformer can press forward hand in hand.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 33 of the largest English towns 6157 births and 3590 deaths were registered during the week ending Dec. 22nd. The annual rate of mortality in these towns, which had been 18·0, 17·7, and 16·8 per 1000 in the three preceding weeks, further decreased to 16·1 during the week under notice. The death-rate in London was 15·7 per 1000, while it averaged 16·4 in the 32 provincial towns. The lowest death-rates in these towns were 10·1 in Derby, 11·6 in West Ham, 12·3 in Norwich, and 12·5 in Burnley; the highest rates were 19·6 in Liverpool, 20·6 in Preston, 22·2 in Salford, and 22·3 in Birkenhead. The 3590 deaths in these towns included 351 which were referred to the principal zymotic diseases, against 363 and 328 in the two preceding weeks; of these, 103 resulted from diphtheria, 76 from whooping-cough, 52 from "fever" (principally enteric), 48 from measles, 39 from diarrhœa, and 33 from scarlet fever. No death from any of these diseases occurred during the week under notice in Norwich; in the other towns they caused the lowest death-rates in Plymouth, Derby, Huddersfield, and Gateshead, and the highest rates in Leicester, Burnley, Blackburn, and Sheffield. The greatest mortality from measles occurred in Swansea; from scarlet fever in Burnley; from whooping-cough in Croydon, Nottingham, and Sunderland; and from diarrhœa in Wolverhampton and Birkenhead. The mortality from scarlet fever showed no marked excess in any of the large towns. The 103 deaths from diphtheria included 36 in London, 20 in Sheffield, 11 in Leicester, and five in Blackburn. No fatal case of small-pox was registered in any of the 33 towns, and only one small-pox patient remained under treatment in the Metropolitan Asylums hospitals on Saturday, Dec. 22nd. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 2406, against numbers decreasing from 2728 to 2617 on the five preceding Saturdays; 218 new cases were admitted during the week, against 279, 259, and 255 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 435, 400, and 349 in the three preceding weeks, further declined to 308 during the week under notice and were 204 below the corrected average. The causes of 45, or 1·3 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Nottingham, Bradford, Leeds, Newcastle, and 11 other smaller towns. The largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Sheffield, and Gateshead.

During the week ending Saturday last, Dec. 29th, 1900, 4178 births and 3773 deaths were registered in 33 of the largest English towns. The annual rate of mortality in these towns, which had been 17·7, 16 8, and 16·1 per 1000 in the three preceding weeks, rose again last week to 16·9. In London the death-rate was 16·7 per 1000, while it averaged 17·1 in the 32 large provincial towns. The lowest death-rates in these towns were 9·5 in Huddersfield, 10·2 in Cardiff, 10·7 in Leicester, and 10·9 in Halifax; the highest rates were 20·9 in Newcastle, 21·4 in Birkenhead, 22·4 in Liverpool and in Preston, and 23·2 in Hull. The 3773 deaths in these towns included 334 which were referred to the principal zymotic diseases, against 328 and 351 in the two preceding weeks; of these 88 resulted from whooping-cough, 78 from diphtheria, 59 from measles, 46 from "fever" (principally enteric), 34 from diarrhœa, and 29 from scarlet fever. No death from any of these diseases occurred last week in Wolverhampton, Norwich, and Huddersfield; in the other towns they caused the lowest death-rates in Croydon, Brighton, and Sunderland, and the highest rates in Nottingham, Salford, Blackburn, and Preston. The greatest mortality from measles occurred in Swansea; from whooping-cough in Derby, Nottingham, Salford, Preston, and Sheffield; and from diarrhœa in Gateshead. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. The 78 deaths from diphtheria included 26 in London, nine in Sheffield, five in Leicester, five in Liverpool, and five in Blackburn. No fatal case of small-pox was registered last week either in London or in any of the 32 large provincial towns, and only one small-pox patient remained under treatment in the Metropolitan Asylums Hospitals on Saturday last, Dec. 29th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 2535, against numbers decreasing from 2727 to 2477 on the four preceding Saturdays; 167 new cases were admitted during the week, against 259, 255, and 218 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had declined from 435 to 306 in the four preceding weeks, rose again to 325 last week, but were 235 below the corrected average. The causes of 77, or 2·1 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Nottingham, Salford, Leeds, and 14 other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool, Preston, Sheffield, Gateshead, and Newcastle.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 21·7, 20·7, and 19·3 per 1000 in the three preceding weeks, further declined to 18·2 during the week ending Dec. 22nd, but showed an excess of 2·1 per 1000 over the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 11 3 in Leith and 16·4 in Dundee to 21·5 in Greenock and 28·7 in Perth. The 563 deaths in these towns included 26 which were referred to whooping-cough, 15 to diarrhœa, 12 to measles, eight to diphtheria, seven to scarlet fever, five to "fever," and one to small-pox. In all 74 deaths resulted from these principal zymotic diseases, against 67 and 79 in the two preceding weeks. These 74 deaths were equal to an annual rate of 2·4 per 1000, which was 0·8 above the mean death-rate from the same diseases in the 33 large English towns. The fatal cases of whooping-cough, which had been 31 and 33 in the two preceding weeks, declined again during the week under notice to 26, of which 22 occurred in Glasgow, two in Paisley, and two in Greenock. The deaths from diarrhœa, which had decreased from 20 to 10 in the four preceding weeks, rose again to 15 during the week ending Dec. 22nd and included 10 in Glasgow, three in Dundee, and two in Paisley. The fatal cases of measles, which had increased from eight to 16 in the four preceding weeks, declined again during the

week under notice to 12, of which seven were registered in Edinburgh, two in Glasgow, and two in Aberdeen. The eight deaths from diphtheria showed an excess of five over the number in the preceding week and included five in Glasgow and two in Leith. The fatal cases of scarlet fever, which had been nine and eight in the two preceding weeks, further declined during the week under notice to seven, of which four occurred in Glasgow. The five deaths referred to different forms of "fever" showed a slight decline from the number in the preceding week and included four in Glasgow, where the fatal case of small-pox was also registered. The deaths referred to diseases of the respiratory organs in these towns, which had been 151 and 136 in the two preceding weeks, further declined to 111 during the week ending Dec. 22nd and were 72 below the number in the corresponding period of the preceding year. The causes of 32, or nearly 5 per cent., of the deaths in these eight towns were not certified.

In eight of the principal Scotch towns the annual rate of mortality, which had declined from 21·7 to 18·2 per 1000 in the four preceding weeks, rose again to 20·4 during the week ending Dec. 29th, and showed an excess of 3·5 per 1000 over the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 8·4 in Perth and 17·5 in Edinburgh to 22·6 in Aberdeen and in Paisley, and 25·8 in Greenock. The 638 deaths in these towns included 33 which were referred to whooping-cough, 18 to diarrhœa, 12 to measles, nine to diphtheria, seven to "fever," five to scarlet fever, and three to small-pox. In all, 87 deaths resulted from these principal zymotic diseases, against 79 and 74 in the two preceding weeks. These 87 deaths were equal to an annual rate of 2·8 per 1000, which was 1·3 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of whooping-cough, which had been 33 and 26 in the two preceding weeks, rose again last week to 33, of which 28 occurred in Glasgow, two in Dundee, and two in Greenock. The deaths from diarrhœa, which had been 10 and 15 in the two preceding weeks, further rose to 18 last week, and included six in Glasgow, five in Dundee and four in Aberdeen. The fatal cases of measles, which had been 16 and 12 in the two preceding weeks, were again 12 last week, of which nine were registered in Aberdeen and two in Edinburgh. The deaths from diphtheria, which had been three and eight in the two preceding weeks, further increased to nine last week, and included three in Glasgow, two in Edinburgh, and two in Aberdeen. The fatal cases of "fever," which had been six and five in the two preceding weeks, rose again last week to seven, of which six occurred in Glasgow. The deaths from scarlet fever, which had declined from 9 to 7 in the three preceding weeks, further declined to 5 last week, and included two in Glasgow and two in Paisley. The three fatal cases of small pox were all recorded in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had declined from 160 to 111 in the four preceding weeks, rose again last week to 121, but were 132 below the number in the corresponding period of last year. The causes of 38, or nearly 6 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 27·4 and 25·8 per 1000 in the two preceding weeks, further declined to 25·7 during the week ending Dec. 22nd. During the four weeks ending on that date the death-rate in the city has averaged 25·9 per 1000, the rate during the same period having been 16·9 in London and 19·6 in Edinburgh. The 172 deaths belonging to Dublin registered during the week under notice included 16 which were referred to the principal zymotic diseases, against 11 and 12 in the two preceding weeks; of these, six resulted from whooping-cough, four from "fever," four from diarrhœa, one from scarlet fever, and one from diphtheria. These 16 deaths were equal to an annual rate of 2·4 per 1000, the zymotic death-rate during the same period being 1·4 in London and 1·5 in Edinburgh. The fatal cases of whooping-cough, which had been four and seven in the two preceding weeks, declined again to 6 during the week ending Saturday, Dec. 22nd. The mortality both from "fever" and from diarrhœa exceeded that recorded in the preceding week. The 172 deaths in Dublin during the week under notice included 32 of infants under one year of age and 41 of persons aged upwards of 60 years; the deaths of infants exceeded the number in the preceding week, while those of elderly persons showed a decline. Eight inquest cases and six deaths from violence were registered, and 56, or nearly one-third, of the deaths occurred in public institutions. The causes of eight, or nearly 5 per cent., of the deaths in the city during the week were not certified.

The annual rate of mortality in Dublin, which had been 27·4, 25·8, and 25·7 per 1000 in the three preceding weeks, further declined to 21·5 during the week ending Dec. 29th, 1900. During the 13 weeks of the quarter ending Saturday last the death-rate in the city averaged 24·5 per 1000, the rate during the same period being 16·5 in London and 17·6 in Edinburgh. The 144 deaths belonging to Dublin registered during the week under notice were 28 less than the number in the preceding week and included 12 which were referred to the principal zymotic diseases, against 11, 12, and 16 in the three preceding weeks; of these, five resulted from whooping-cough, four from "fever," two from diarrhœa, and one from scarlet fever. These 12 deaths were equal to an annual rate of 1·8 per 1000, the zymotic death-rate during the same period being 1·4 in London and 0·9 in Edinburgh. The deaths referred to whooping-cough, which had been seven and six in the two preceding weeks, further declined last week to five. The four fatal cases of "fever" corresponded with the number in the preceding week. The deaths from diarrhœa, which had been two and four in the two preceding weeks, declined again to two last week. The 144 deaths in Dublin last week included 20 of infants under one year of age and 47 of persons aged upwards of 60 years; the deaths of infants showed a marked decline, while those of elderly persons slightly exceeded the number in the preceding week. Five inquest cases and four deaths from violence were registered, and 53, or more than a third, of the deaths occurred in public institutions. The causes of six, or more than 4 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

THE RETURN OF THE FIELD-MARSHAL.

FIELD-MARSHAL LORD ROBERTS, for so, we suppose, we must continue to call him until the official conferment of the higher titles he has won, landed at Cowes on Jan. 2nd. Here he was received by all classes from Royalty downwards with that respect and affection which he so well deserves. At the landing stage he was greeted by the Duke of Connaught and Princess Henry of Battenberg, both of whom shook his hand in welcome. Owing to the injury received at Johannesberg Lord Roberts was unable to use his right hand, but he was looking in the best of health and had apparently quite recovered from the fatigues of campaigning. Opposite the town-hall of East Cowes there was a grand stand erected for the accommodation of the spectators, while in front of the stand were drawn up five invalid soldiers from South Africa and veterans from various campaigns in which Lord Roberts had taken part. Here were men from Kabul and Kandahar, from Cawnpoore and Lucknow, all come to welcome their chief on his return from his latest and perhaps most arduous campaign, and for all there was a shake of the hand and a kindly word. Addresses were presented from various local bodies, and then Lord Roberts made his speech of thanks—one of those kindly, simple speeches which he so well knows how to make. He thanked them all for the honour done to him and then passed on to consider the state of affairs in South Africa. In his successor in command, Lord Kitchener, he professed absolute confidence, though that commander had no easy task. His lordship continued:—

You, ladies and gentlemen, have been so fully kept informed by the daily telegrams and the newspaper correspondents of the sufferings so nobly borne and the deeds so gallantly done throughout the campaign that I am sure you will not be surprised if I take this, my earliest, opportunity of expressing my pride in having had the command of such a magnificent army—an army composed of men drawn from all parts of Her Majesty's dominions—men of whom the empire and their friends may well be proud. Among them an admirable spirit of camaraderie has ever existed. The soldiers of Great Britain and the soldiers of Greater Britain have pulled together as brothers fighting under one common flag, and owing allegiance to one common Sovereign, who is beloved and revered equally by all. These unanimous outbursts of loyalty must, I think, be extremely gratifying to Her Majesty and must be considered eminently satisfactory by all Her Majesty's loyal subjects, for with our empire firmly knit together we need fear no

outward foe so long as we are careful ourselves to see that there is no weak point in our armour. I thank you all again most sincerely for the great honour you have done me.

Lord Roberts then drove off to Osborne, arriving at the gates punctually at five minutes to four. His bodyguard consisted of his six Indian orderlies, the route being kept by regulars and volunteers, while the carriage was preceded by a squadron of Yeomanry. The Field-Marshal entered by the Queen's entrance and was met in the courtyard by the gentlemen of the household and escorted to the council chamber, where he was greeted by Prince and Princess Christian, Princess Henry of Battenberg, the Duchess of Connaught, and various other members of the Royal family. Shortly afterwards Lord Roberts was received by Her Majesty in private audience, when it was understood that the Queen intimated her intention of conferring an earldom upon him together with the Most noble Order of the Garter. After the audience Lord Roberts left for Southampton and on the morning of Jan. 3rd proceeded to London, arriving at Paddington at 1 P.M. At the station his lordship was met by the Prince and Princess of Wales, the Duke and Duchess of York, and the Duke and Duchess of Connaught. The Queen's route was taken to Buckingham Palace, where at the moment of writing Lord Roberts is lunching.

We express our pleasure at seeing safe home again one who at a time of bitter sorrow put aside his own grief and went at his country's call to bear the hardships and anxieties of a campaign. His work is known to all: let us welcome him in all thankfulness, although by no means forgetting those who are still bearing the burden of empire.

ROYAL NAVY MEDICAL SERVICE.

The following appointments are notified:—Staff Surgeon J. H. Stenhouse to the *Diana*. Surgeons: H. W. B. Shewell to the *Diana*; R. Hughes to the *Arrogant*; R. L. Price to the Royal Marine Division, Portsmouth; M. Breton to the *Vivid*; C. G. Matthew to the *President*; J. G. Corry to the *Duke of Wellington*; F. C. B. Gittings to the *Monarch* for service on ship and Naval Prison; and G. M. O. Richards to the *Mars*.

ROYAL ARMY MEDICAL CORPS.

The undermentioned civil surgeons now serving in South Africa to be Lieutenants:—Walter James Waters, Basil Pares, Henry Francis Shea, Charles Elphinstone Fleming, Percival James Bodington, Joseph Francis Whelan, Percy Samuel Lelean, James Barkley, William Henry Odlum, Frederick Archer Stephens, Miles George Sterling, William Moroney Power, John Tyrer Johnson, Edgar Francis L'Estrange, Robert Barclay Black, and William Morehead McFarlan.

Temporary Captain Thomas Barton Unwin from medical officer, the Imperial Yeomanry, to be Lieutenant.

INDIA AND THE INDIAN MEDICAL SERVICES.

On relinquishing charge of the civil medical duties of the Amritsar District, Captain A. W. T. Buist, civil surgeon, is posted to Gurdaspur as plague medical officer. Lieutenant-Colonel J. Crofts has been appointed surgeon to his Highness the Maharaja of Jodpore.

The Queen has approved of the following promotions among the officers of the Indian Medical Service. To be Colonel: Lieutenant-Colonel James Sutherland Wilkins, D.S.O., Bombay Establishment. Majors to be Lieutenant-Colonels: Bengal Establishment: George Michael James Giles, Arthur Robert Wyatt Sedgefield, Edwin Francis Horatio Dobson, Johnston Shearer, D.S.O., Hem Chandra Banerji, Sambhu Chandra Nandi, and Francis Samuel Peck. Madras Establishment: John Lawrence Van Geyzel, Hastings Norman Victor Harington, Gerard Macklin Eccles McKee, Kavasji Cursetji Sanjana, Hormasji Merwanji Hakim, John Adolphus Burton, Francis Joseph Doyle, Manekshaw Jamshedji Kelá wálá, and Mervanji Pestanji Kharegat. Bombay Establishment: Kavasji Hormasji Mistri, George Ernest Fooks, and Joseph William Townsend Anderson. Captains to be Majors: Bengal Establishment: Herbert Edward Drake-Brockman, William Byam Lane, and Philip James Lumsden. Bombay Establishment: Samuel Esmond Prall.

ROYAL MALTA ARTILLERY.

Surgeon-Lieutenant Robert Vella, from the Royal Malta Regiment of Militia, to be Surgeon-Lieutenant (with local and temporary rank).

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Major J. P. Massingham resigns his commission.

VOLUNTEER CORPS.

Artillery: 1st Norfolk (Eastern Division, Royal Garrison Artillery): Surgeon-Lieutenant John Charles Reynolds Robinson resigns his commission and is appointed Second Lieutenant. *Rifle:* 1st Volunteer Battalion the Royal Fusiliers (City of London Regiment): Brigade-Surgeon-Lieutenant-Colonel S. P. Smith resigns his commission, with permission to retain his rank and to wear the uniform of the battalion on retirement. 3rd Volunteer Battalion the South Staffordshire Regiment: Supernumerary Surgeon-Captain C. A. MacMunn to be Surgeon-Captain on the Establishment. 4th (Perthshire) Volunteer Battalion the Black Watch (Royal Highlanders): Surgeon-Lieutenant Colonel J. Macfee resigns his commission, with permission to retain his rank and to wear the uniform of the battalion on retirement. 1st (Renfrewshire) Volunteer Battalion, Princess Louise's (Argyll and Sutherland Highlanders): The undermentioned officer resigns his commission: Surgeon-Lieutenant C. McBryde. 20th Middlesex (Artists'): Surgeon-Lieutenant C. S. de Segundo to be Surgeon-Captain.

ROYAL NAVAL HOSPITAL, HASLAR.

The session of instruction at the Royal Naval Hospital, Haslar, for newly-entered surgeons in the Royal Navy terminated on Dec. 21st, 1900, when the prizes were distributed by Sir Henry Norbury, M.D., K.C.B., Director-General of the Medical Department of the Navy, and they were awarded as follows—viz., two prizes consisting of a gold medal and a microscope to Surgeon George Ross, B.A., M.B., and one prize, a silver medal and books, to Surgeon Noel H. Harris.

The following is a list of the surgeons who have been under instruction during the session, arranged in order of seniority as determined by the sum total of the marks obtained at the examination in London on entry and those on the conclusion of the Haslar course:—

Name.	Marks.	Name.	Marks.
G. Ross, B.A., M.B. ...	6300	J. M. H. Conway	4348
J. S. Dudding	5407	H. V. Wells	4341
N. H. Harris	5133	W. Bastian...	4254
H. C. Adams	4975	R. B. Scribner	3985
L. Lindorp...	4960	A. J. Sheldon	3673
C. T. Baxter	4922	J. Verdon	3486
W. E. Gribbell	4632	J. Whelan	3466
R. W. B. Hall	4421	C. R. Rickard	3347

MAUSER WOUNDS AND AMPUTATION.

Writing on this subject in a recent number of the *Archives de Médecine et de Pharmacie Militaires*[1] Dr. J. Alvernhe expresses himself to the following effect. During the early months of the South African war the whole of the surgeons engaged had the satisfaction of noting how relatively benign the wounds that were caused by Mauser projectiles showed themselves, rarely necessitating any serious operative intervention. Consequent on reports from such eminent surgeons as Sir William Mac Cormac, Mr. Treves, and Mr. Dent, the notions became widely current that Mauser bullets generally passed clean through bones, making small cylindrical channels which looked as if they had been cut out by a punch; that penetrating wounds of the cranium were, for the most part, attended by merely insignificant disorder; and that the new projectile threaded its way amidst vessels and nerves without giving rise to any immediate or subsequent disturbance of a grave character. Later, however, the conditions to which these favourable results were due seem to have undergone considerable modification, and the surgeons who ached the theatre of war during the second stage of the campaign were unable to emulate the optimism of their predecessors. Equally ardent exponents of conservative surgery, these distinguished men frequently found themselves reluctantly compelled to have recourse to amputation in order to save the lives of patients for whose injuries the Mauser rifle was responsible. Many reasons have been advanced to account for this regrettable alteration of type. In the first place, it is said that the Boers of late have taken to manipulating their cartridges in order to make the bullets spread on impact and in this way to inflict

[1] No. 12, December, 1900, p. 514.

a wide, ragged, and excessively serious wound instead of the smooth, narrow burrow as above described. Secondly, in the opinion of some observers the space between the combatants has tended to grow less than it was at first, and as a natural consequence the severity of the wounds received at the shortened ranges is much greater than it was. In the third place—and according to Dr. Alvernhe it is here that we have to look for the real explanation—the soldiers being all more or less worn out owing to climate, exposure, bad food, privation, and excessive marching are not so apt for recuperation as they were at the beginning of the war. Their constitutions have run down and their wounds consequently suffer from the lack of vitality. Hence the frequency of the suppurations which are now found to retard cicatrisation.

TRANSVAAL WAR NOTES.

Major B. W. C. Deeble, R.A.M.C., and Civil Surgeon H. J. Starling left South Africa for England in the *Dunera* on Christmas Day.

The following have been discharged from hospital to duty:—Civil Surgeons: H. E. Birmingham, W. O. Beddard, W. J. Collins, and A. Thompson.

SOME FACTS RELATING TO CHOLERA IN INDIA.

The annual report for 1898 of the Sanitary Commissioner with the Government of India published recently contains, among other things, some interesting facts in connexion with cholera. The year 1898 was a relatively healthy one both as regards the European and native armies of India and the native population, and the military shared in the immunity from cholera—an immunity which generally existed throughout the Indian Empire. Cholera occurred among British troops in nine stations only, and there were in all 30 cases and 21 deaths, a case-mortality of 70 per cent. In only one instance was the disease in epidemic form—viz., at Umballa, where there were 20 seizures, with 10 deaths out of the 11 Europeans attacked. Among native troops cholera occurred in six stations among 10 bodies of men. There were in all 57 cases, of which 44 ended in death, a case-mortality of 77·2 per cent. Only 11 jails out of the total number of Indian jails suffered, and there were only 16 cases in all. From the cases in which details were available it appears that altogether 259 individuals were in attendance on 102 cholera cases, and none of them were attacked. No seizures followed subsequently to the movement of troops from infected localities in the case of British troops, but the effect of such movement, although generally satisfactory, was not so completely successful in the case of native troops. The outbreak among European and native troops and followers at Umballa was of special interest, because the Punjab was apparently free from cholera at the time of its occurrence. It is unfortunate, however, that the accounts of the outbreak at Umballa were of a fragmentary character. The Umballa cantonment water-supply is conveyed by pipes which were leaky, and the medical officers consequently ascribed the outbreak to a polluted water-supply, but there was no satisfactory evidence pointing to the water as the cause of cholera. It is curious "that the vibrio of cholera was found in the well used by the Government model dairy, but no case occurred at the dairy, and neither the milk nor the butter from the dairy, appear to have been used by the natives who suffered."

THE STORY OF THE THORN.

The story of the thorn is published in the *Times* of Dec. 26th, 1900, as illustrative, we suppose, of the surgical incompetence of the medical staff and the shortcomings of army hospitals in South Africa. It may or may not be an accurate record of the experience of the patient in question, about which we have our own opinion. But it seems to us grossly unfair and wrong for a writer to seek to cast a slur upon a body of men belonging to any service under the shelter of anonymity. "F.R.C.S." may have a keen appreciation of what constitutes a good story, but we cannot congratulate him on any fastidious sense of honour or justice. If he considered it his duty on public grounds that the allegations should be brought to notice he could easily have done this through the proper channel. At any rate, the story should not have been told anonymously but should have been signed and accompanied by such particulars as would have enabled the authorities on the spot to have instituted, in the interest of all concerned, some inquiries into the matter. As it is, "F.R.C.S.," has cast an unworthy aspersion indiscriminately upon a large number of members of his own profession in the army and, in effect and by implication, has maligned them.

ARMY REFORM.

It is understood that Lord Wolseley will take an early opportunity of speaking on this subject in the House of Lords, and there is naturally a good deal of interest and curiosity felt as to what the late Commander-in-Chief will have to say and as to the nature of the reply which the Government will make and the course which it will adopt. The matter is one of national interest and concerns the medical as well as all other branches of the army.

On Jan. 1st Her Majesty the Queen paid a visit to the Convalescent Home at East Cowes. Several men from South Africa were there, and on the evening of the same day members of the Royal family from Osborne entertained them with music, both vocal and instrumental.

Among the names in the list of New Year honours is that of Major John Crimmin, I.M.S., V.C., who has been made a Companion of the Order of the Indian Empire.

Correspondence.

"Audi alteram partem."

LENGTHENING TENDONS FOR THE SO-CALLED ISCHÆMIC PARALYSIS (VOLKMANN) FOLLOWING ON INJURIES ABOUT THE ELBOW-JOINT.

To the Editors of THE LANCET.

SIRS,—In your review of the surgical work of the year you refer to tendon lengthening as one of the surgical procedures worthy of note. The case you refer to is "a little boy suffering from ischæmic paralysis the result of application of splints for a fracture of the lower end of the humerus or separation of the lower epiphysis of the humerus." In THE LANCET of Feb. 3rd, 1900, you kindly published a clinical lecture of mine on this subject, and if you will allow me I should like to again emphasise one or two points I then raised.

I think it is extremely unfortunate that such an inappropriate term as "ischæmic paralysis" should be applied to a condition which is really primarily a contraction of muscles and not due in any way to the involvement of the nerves, nor can it be shown to be the result of deprivation of blood to the parts—ischæmia. In my lecture I stated:—

> The deformity appears always to occur in children after some severe injury about the elbow-joint and generally after a fracture separation of the lower humeral epiphysis. I have once seen it after a dislocation of both bones of the forearm backwards. The cause of the deformity is, I believe, primarily in the muscular portions of the flexor muscles of the forearm. If the histories of these cases are carefully gone into it will be found that the injuries have been severe and that the flexor muscles have been torn, possibly by the displacement of the forearm backwards with the lower end of the humerus. The torn muscle is replaced by fibrous tissue, and this contracting is, I believe, responsible for the deformity. A lump, varying in size can be felt in the flexor muscles in the upper third of the forearm and it has been present in all the cases which I have seen. It is a well-recognised condition in the sterno-mastoid muscle. A swelling is found in about the middle of the muscle soon after birth, which is thought to be due to a tearing of its fibres during parturition; this sometimes produces wry-neck.
>
> I do not believe that splint-pressure has anything to do with the production of the deformity, although I am well aware that in most cases a sore—pressure sore—is present; but this is not always so, for in Case 1 no abrasion of any kind was present and in Case 2 a sore formed but was on the extensor surface of the forearm. I am especially laying stress on this point as it has given rise to one theory—that the contraction is due to a secondary inflammation extending to the muscles from the splint sore. That explanation clearly will not account for Case 1 in which there was no sore of any kind, and in Case 2 the sore was on the back of the forearm. One would imagine that any inflammation extending from this sore would have involved the extensor muscles and produced a hyper-extension of the wrist instead of involving the flexor muscles. For these reasons I am inclined to think that the pressure-sores are not causally related to the deformity; they may, however, be taken as some index of the amount of laceration of the soft parts at the time of the injury, producing a great amount of effusion which increases in amount after the application of splints. Probably the effusion of blood into the skin and subcutaneous tissues renders them anæsthetic, acting in the same way as a hypodermic injection of water; and this may explain why a large sore may form and yet the patient will not complain of any pain.

The explanation here given is, I venture to think, worthy of a fuller consideration. As to the treatment by tendon

lengthening the results justify the treatment. Mr. Page and myself quite independently arrived at the same conclusion that this was the most reasonable way of treating this particular deformity. By referring to the records of our cases it will be seen that I performed the operation about a month before Mr. Page—another example of arriving at the same conclusion independently when similar conditions are under consideration. In my first case the result is now excellent; in the second case the result is fair, the fingers are straight, but the movements are weak. I have since operated on a third case, on August 28th, 1900—a girl aged three years. Her fingers are now quite straight and the power is daily improving; it is too early yet to speak of what the ultimate result will be.—I am, Sirs, yours faithfully,

Leeds, Dec. 31st, 1900. H. LITTLEWOOD.

"ARSENIC IN ARTIFICIAL MANURES."

To the Editors of THE LANCET.

SIRS,—THE LANCET of Dec. 22nd contains a short annotation under the above heading which, if copied into numerous country papers, is calculated to produce a most unwarrantable prejudice against the application of artificial manures. It is not sufficient to make general statements, the actual facts should be given. If, as the writer of the annotation states, "the results are not yet ripe for publication," why should a premature prejudice be created in the public mind? In one paragraph it is stated that the Laboratory Commissioners had found certain artificial manures to be rich in arsenic in a soluble form—namely, soluble in water; but further on in another paragraph it is suggested that arsenic accumulates in the soil. Now, if arsenic be present in a form readily soluble in water it must be obvious that it is not likely to accumulate in the soil. On the contrary, if it exists in a soluble form it is more likely to be washed out of the soil than to accumulate. The mere presence of arsenic in a sample of artificial manure is no evidence whatever that crops manured with such a fertiliser would be in any way likely to produce injurious results to the health either of man or beast. In all these matters it is a question of quantity. Some years ago the present writer had occasion to examine some meadow grass which was rendered unfit for grazing purposes in consequence of sediment deposited from the washings of a copper mine, and in order to make a comparison of the amount of copper salts present pieces of turf were obtained from portions of the field not damaged by mineral washings, but, curiously to relate, these pieces of turf contained appreciable quantities of copper, and the grass had been evidently appreciated by the cattle who had refused to eat the portion upon which the detrita of the mine washings had been deposited. The quantity of arsenic likely to be supplied in any artificial manure must be exceedingly small when distributed over the whole field, probably not more than $\frac{1}{10}$th of a grain per square foot, and being in a soluble form is quite as liable to be washed out of the soil as to be absorbed by turnips or cabbages. I am, Sirs, yours faithfully,

Mark-lane, E.C., Dec. 31st, 1900. JOHN HUGHES, F.I.C.

*** Our words "the results are not yet ripe for publication" did not refer to the examination of artificial manures but to an investigation into other substances. A list of these will be found in another column of this issue (see p. 54). The fate of soluble arsenic, according to our correspondent's view, would be precisely the same as that of the equally soluble nitrates and phosphates used for fertilising purposes. Are they also "washed out"?—ED. L.

"ISOLATION HOSPITALS."

To the Editors of THE LANCET.

SIRS,—The following cases occurring during the past week are surely a proof of Mr. E. D. Marriott's contention that the "return" cases from isolation hospitals are probably the greatest source of further infection. Two children, William Neville and Annie Foster of Henham, Essex, living about two miles apart, returned from the Hospital for Infectious Diseases at Bishop's Stortford on Dec. 16th last. William Neville was sent there on Oct. 22nd and Annie Foster on Nov. 2nd, both suffering from scarlet fever. The child Neville was kept longer than the usual six weeks so that they "might return home together." Their respective homes were absolutely free from any disease during the time that the children were in hospital, but on Dec. 23rd, just a week after the return of each, I discovered a fresh outbreak of scarlet fever in both of the homes, two children being attacked in Neville's house and one in Foster's. The child Neville had a nasal discharge when he returned home.

As far as I can ascertain these were the only cases of scarlet fever in the near neighbourhood. So there is certainly no doubt whatever that these "return" cases were the cause of the second outbreak. My idea is that isolation hospitals should be situated on eminences, if possible, as far away from the town as practicable and an intermediary home or hospital (at a distance) should be supplied where convalescents could remain for a further fortnight after discharge from the isolation hospital and where they should be daily bathed, sent out in the open air, and examined and returned to their homes either in new clothes or properly boiled old ones. I am, Sirs, your faithfully,

Stansted, Essex, Jan. 2nd, 1901. EDGAR PITTWAY.

"THE TEACHING OF ANÆSTHETICS."

To the Editors of THE LANCET.

SIRS,—THE LANCET of Nov. 17th, 1900, contains a leading article (p. 1440) and a letter (p. 1460) by a well-known surgeon—Mr. J. Lionel Stretton—on anæsthetics. Mr. Stretton complains that "such recently qualified men as seek for hospital appointments are lamentably ignorant in the administration of anæsthetics," and this being the case with the pick of the men entering the profession "the rank-and-file must be deplorably incompetent." Mr. Stretton further states that the "examining bodies do not demand any special training in this important subject. ..... I hope the General Medical Council will give their early attention to the matter." The leading article adds point to Mr. Stretton's remarks, and makes it tolerably clear that the principal reason for his complaint is to be found in the fear of chloroform which is impressed upon students by the teaching of anæsthetics in London. We are told by the writer of the article that the safety of an anæsthetic depends, not on the method of administration, but on "whether or not its power of destroying nerve protoplasm is great or small. That of chloroform is great, that of ether is slight, that of nitrous oxide is least of all." This antiquated doctrine is destitute of the smallest shred of truth, as chloroform and ether when inhaled have no more effect on nerve protoplasm than they have on the protoplasm of the stomach or the biceps. But the moral of such teaching, of course, is that the use of chloroform, the most beneficent of all anæsthetics, should be restricted to the narrowest limits, and in dental operations, at all events, only gas or gas and ether employed. As long as fustian of this kind constitutes the standard teaching in England it is useless to expect any improvement whatever in the confidence and ability of the rank and file of the profession to administer anæsthetics. Nor would examinations improve the matter, since they would only test the proficiency of the student in the teaching which is at the root of the evil. The effects of this teaching, which has been tolerated a great deal too long, are threefold. It has rendered the anæsthetist inefficient—chiefly through fright; it has been the direct cause of an immense number of preventable deaths; and it has tended to debase surgery.

In THE LANCET of the previous week (p. 1383) Dr. Dudley Buxton, who is an authority on the London methods of teaching anæsthetics, states that the anæsthetist is not to be looked upon "as a giver of an anæsthetic. His familiarity with surgery should enable him to know what the operator requires, and what will be the effect of the operator's manipulations upon the patient under anæsthesia. His knowledge of anæsthetics should be such that he can adapt the anæsthetic to the necessities of the patient and the requirements of the surgeon. The tremendous responsibility of the anæsthetist whose want of knowledge, of skill, or of courage may jeopardise the patient's life or frustrate the surgeon's most skilful endeavours should be most fully recognised." The first part of this statement appears to be tantamount to advising the man who is giving chloroform to devote part of his attention, the whole of which ought to be concentrated on the inhalation, to assisting or furthering in some way or other, or "keeping

an eye on," the manipulations of the surgeon, and if this is Dr. Buxton's meaning it cannot be too strongly condemned, as it is acknowledged to be the most dangerous of all doctrines to preach. But the gist of the whole argument is more fully disclosed in the second part of the statement. It is that the surgeon is no longer to be responsible for the safety of his patient, but the responsibility is to be shared by the man who gives the chloroform or ether. In certain eventualities the anæsthetist is to dictate to the surgeon, so that the surgeon becomes a mere operator, a subordinate instead of the chief who under all circumstances retains the supreme command and the entire responsibility in his own hands. This constitutes in my opinion the tendency to the degradation of surgery against which surgeons should guard with all their might. There is no doubt about its evil effects on the profession. I know of an operation in England where the anæsthetist gave the patient a slight overdose of chloroform with a Junker's inhaler. The patient, a child, became pallid, and the anæsthetist told the surgeon that he must stop the operation as there was some shock. The surgeon meekly obeyed this direction and sent the child back to bed with the operation unfinished. The proper course for the surgeon obviously was that he should have noticed that the chloroform was being given a little too freely and have told the anæsthetist not to give so much.

The writer of the article of Nov. 17th sheds crocodile tears over the "potency" of chloroform, a phrase which must mean one of two things: either (1) it means that the rank and file of our profession are not to be trusted to employ a potent drug—e.g., chloroform—with safety; or (2) that chloroform possesses a special potency for evil of its own. No one, least of all THE LANCET, could insult the profession by attempting for a moment to maintain the first of these propositions, which is belied in practice in the case of other drugs quite as potent as chloroform every day, and the second is only true in so far as faulty and unsafe methods of administration are concerned. Chloroform has no particular or mysterious potency or action of its own apart from overdosing, and overdosing can be avoided by anybody who knows how to look after the breathing in the right way. I would venture to urge that if THE LANCET, instead of using its enormous power to restrict the employment of chloroform, adopted the opposite tactics and exerted all its influence to extend the benefit of the anæsthetic it would be doing the profession a service of the greatest possible magnitude, which it would be impossible to repay. Snow's obsolete methods and teaching have had a fair and extended trial, with the result that of the men who pass out from the English schools the best are said to be "lamentably ignorant" and the rank and file "deplorably incompetent" in the administration of anæsthetics. Let Syme's principles and the Hyderabad method of administration of chloroform now have an equally fair trial and the entire position of anæsthetics will be changed. I am convinced from careful observation that the students of the London medical schools, judging especially by the young men who are entering the services in India, are unsurpassed anywhere, and if properly instructed are capable of giving chloroform with absolute safety. Here we use chloroform for everything, and as a rule we never even extract a tooth, in hospital or private practice, without it, and none of our patients, as far as I am aware, ever runs the smallest risk. It would be absurd to contend that what we do daily in routine practice the men of the English schools cannot do at all. So long, however, as they are controlled and hampered by an unfounded fear of chloroform anæsthetics will remain in their present unsatisfactory state, and surgery will continue subjected to the degrading and throttling thraldom of ether.

I am, Sirs, yours faithfully,

E. LAWRIE, M.B. Edin.,
Lieutenant-Colonel I.M.S., Residency Surgeon,
Dec. 10th, 1900. Hyderabad (Deccan).

THE DRINKING OF METHYLATED SPIRIT.

To the Editors of THE LANCET.

SIRS,—May I be permitted to draw attention to the ravages which the drinking of methylated spirit, now indulged in to an enormous extent by the poorer classes of all the great towns, brings about amongst its victims. I would also suggest that the time is now opportune to investigate its pathology, and its more characteristic clinical manifestations. Methylated spirit, as now allowed to be sold by the Inland Revenue, consists of about 88 per cent. of alcohol, 62 over proof, 10 per cent. of wood naphtha, and about 1 per cent. of petroleum oil. The addition of the mineral oil was expressly added with a view to prevent its being drunk, but spirit-takers soon discovered that by adding water to the spirit the petroleum oil was separated and could be removed. It generally retails at from 5*d.* to 6*d.* per pint and, containing as it does twice as much alcohol as the best whisky, the drinker is enabled to procure the alcoholic equivalent of half a pint of whisky for three-halfpence. It is quite obvious, then, that the one thing needful in order to obtain an unlimited supply of alcohol for a few pence daily is to acquire a taste for the poisonous spirit, and this is apparently readily cultivated, especially by those who have long learned to seek in spirit a stimulant and not a bouquet.

Cases, although they are numerous enough, where death has followed the use of methylated spirit have usually been classed as due to some form of alcoholism, and even men of considerable experience may be found to deny that they have ever known of a fatal case, short of a history of the habits of the individual. I do not know of any post-mortem signs which would indicate that the methylated and not ordinary alcohol had been used, but the wood naphtha seems to affect the spleen more than is common in cases of mere alcoholism, and the blood seems to stain the serous membranes, as is found after many poisons. The heart muscle seems to become darkened and very friable, and the tendency to general arterio-fibrosis is apparent at a much earlier age than obtains even with alcoholics. Takers of methylated spirit deny the habit with a persistency and an ingenuity which are only equalled by those of a cocainomaniac, and which are infinitely more acute than the excuses of the opium-drinker, whose habits are generally marked on his person. They differ, too, from the mere drunkard in this, that but a small quantity can be taken at a time, and the effects pass away quickly—phenomena which have been already noted in the case of ether-drinkers. Many of the victims are poor students and literary hacks, and unlike purer alcohols methylated spirit does not seem so prone to produce somnolence. The impossibility of early morning sleep and the craving for the spirit with the break of day are marked characteristics, but instead of being heavy, sodden, bleer-eyed, stupid, and sick, the victims, even in the earliest morning, are bright, keen, intelligent, active, yet with a yearning for the spirit which might be described rather as a hunger than a thirst. As methylated-spirit-drinking is indulged in to the extent of probably 100,000 gallons per annum, and has doubtless caused infinitely more deaths than arsenical beer, it might be fitting that it should receive some notice at your hands.

I am, Sirs, yours faithfully,

J. C. MCWALTER, B.A., D.P.H., F.F.P.S.

Dublin, Dec. 26th, 1900.

"SOME DISAPPOINTMENTS IN SURGERY."

To the Editors of THE LANCET.

SIRS,—May I add a few remarks to those of Mr. D'Arcy Power in reference to "mental disturbance following a surgical operation" in his interesting paper on Some Disappointments in Surgery in THE LANCET of Dec. 22nd (p. 1789)? It seems to me that none of the three cases he cites from his personal experience is an instance of "post-operative insanity," strictly speaking. His first is "pre-operative," so far as the report shows. The second is most likely "post-anæsthetic," and the third was probably also toxic and septic. In classifying cases, I think those whose "mental condition is clearly impaired from the time of recovery from the anæsthetic," and also those who are evidently septic, should be differentiated from "post-operative" cases pure and simple, in which so far as can be ascertained, the mental disturbance is not due to either the anæsthetic or a septic condition. Sir W. M. Banks and Dr. Macphail have both referred in their recent papers to an article of mine on Post operative Insanity in the *Journal of Mental Science* for January, 1897. The points relating to the action of anæsthetics, sepsis, &c., are, however, more fully discussed in "Cerebral and Mental Symptoms," from which book the article noted was largely taken.

I am, Sirs, yours faithfully,

Cambridge, Jan. 1st, 1901. J. CHRISTIAN SIMPSON.

A POINT IN THE ADMINISTRATION OF NITROUS OXIDE GAS.

To the Editors of THE LANCET.

SIRS,—May I ask for a small space in your columns to try to eliminate during the present century the uncomfortable and pernicious habit of advising a patient "to breathe deeply," "to take a deep breath," "to breathe as if you were blowing on a looking-glass," &c., which has been employed ever since nitrous oxide insensibility has been induced, and seems likely to be with us always. Such a method is perfectly unnecessary, is very disturbing to the patient, and is very much in the way of a comfortable insensibility. I have tried to prevent patients from thinking of their breathing for nearly 40 years, but it happens so often that the patient has been so instructed that I beg once more to call attention to it as at least undesirable and due to want of thought.

I am, Sirs, yours faithfully,

Brook-street, W., Jan. 1st, 1901. TOM BIRD.

"THE TREATMENT OF PULMONARY TUBERCULOSIS."

To the Editors of THE LANCET.

SIRS,—Having read with much interest, and I trust with profit, Dr. Robert Maguire's interesting lectures on the above subject I am delighted to agree with his incisive criticism in a great many particulars. It is time some counterblast was raised against the numerous sanatoria springing up like mushrooms all over the country, the main idea being speculation and the well-being or recovery of the inmates quite a secondary consideration. In this connexion it would be interesting to inquire how many cases are accepted for treatment who are not genuine cases of tuberculosis but who are perhaps allowed to live in that idea and others buoyed up into the false hope of cure who are quite beyond human aid.

No wonder Dr. Maguire makes the remark: "The profession seems to have gone mad on this matter." But it is to be hoped there are some exceptions to this sweeping statement. We all remember the Koch "cure" and the numbers of the profession who rushed to Germany to annex the idea come home and at once float into fame. We know the result, and the open-air treatment will in a short time die, as it has done when tried before. The instance of forced feeding by mutton chops *ad nauseam* will probably be improved upon by mechanical aids, something after the manner of feeding turkeys and cramming fowl. The patient instanced by Dr. Maguire no doubt paid well for his chops but gave a bad return. It would be nearly as sensible to treat juvenile "consumption" with stale bread.

I am, Sirs, yours faithfully,

Dec. 31st, 1900. M.R.C.S.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENT.)

Plague and the Mecca Pilgrimage.—The Benefit to Ceylon of Plague Regulations.—The Epidemic at a Standstill.—The Mortality of the Great Famine.—The Bacillus of Beri-beri.

NOTWITHSTANDING that the European Governments, including that of Turkey, realise the danger of importing plague the Government of India do not think it necessary to prohibit pilgrimage from the unaffected portions of India during the ensuing season. It is said that the Indian pilgrims during last season were subjected at Turkish ports to many vexatious restrictions and consequent hardships, but the Government of India consider it essential that careful precautions should be observed at Indian ports similar to those which were enforced during the past season. Accordingly, the port of Karachi for pilgrims from parts of the north of India and the port of Chittagong for other parts have been determined as the only places where pilgrims may embark for the Haj. No person will be permitted to make a pilgrimage to Mecca this season from any of the infected portions of India—viz., the Presidency of Bombay excluding Sind, the Madras Presidency, the Mysore State, Coorg, the Jullundur District of the Punjab, and Bengal, excepting the Chittagong division.

Ceylon has been peculiarly free from cholera during the past year. The explanation appears to be the following. All outbreaks of cholera can be traced to India and must be introduced, as cholera does not occur spontaneously. The north road coolie route was closed to coolie traffic on Jan. 1st, 1899, in order to guard against plague, but it appears to have had the additional advantage of keeping out cholera. The coolies in former years had to march some 130 miles to their places of employment along the north road, and by the time that they arrived they were generally in such a depressed condition that they readily succumbed to any disease to which they were exposed. Now the coolies have to come straight from the port of embarkation to Colombo and are at once fed and cleansed and then sent to the Ragama camp. On the next day they are sent by train to their destination.

The plague returns for India show little change. There were 1689 deaths for the week ending Dec. 8th, as compared with 2140 deaths for the previous seven days and with 1579 for the corresponding week of 1899. The Bombay Presidency reports a decline from 560 to 329 deaths, and the Mysore State also from 610 to 523 deaths. In Bengal, however, there has been an increase from 798 to 878 deaths, Gaya and Patna and those districts showing the chief development. In Bombay city the returns would make it appear that the plague is about stationary and the same may be said for Calcutta. In both cities, however, there are signs of a recrudescence, more especially in Calcutta where many more suspicious and plague deaths occur than are reported. For the week there were 65 deaths in Calcutta and 70 deaths in Bombay.

Your readers will regret to hear that the Corporation of Bombay have refused to subscribe towards the Pasteur Institute at Kasauli.

The numbers under famine relief have now sunk to about 250,000. Lord Curzon calculates that the famine has cost the parts of India affected about 750,000 lives. As a matter of fact, however, comparatively few died from sheer starvation, although insufficient diet and destitution over a considerable period indirectly caused a large amount of sickness and mortality.

One of the most important communications on the subject of beri-beri appears in the Indian Medical Service paper for December. Captain E. R. Rost, I.M.S., of Burma describes a diplo-bacillus which forms a sort of angle. He has been working on the idea that beri-beri is a rice disease and has found the organism between the starch cells. Several kinds of fermented rice-water are used by the natives and a peculiar yeast which is obtained from Singapore is used to produce them. Captain Rost has also found the same peculiar organism in the blood of beri-beri patients in the cerebro-spinal fluid, and in the serous exudation of the sheath of the sciatic nerve. The organism develops spores and is very active—"wagging one rod in front of the other." In 32 cases of beri-beri the organism was found in every one. It seems to be peculiarly resistant to heat.

Dec. 13th, 1900.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Lord Mayor's Hospitals' Century Fund.

THE Lord Mayor has issued an appeal to the citizens of Liverpool for subscriptions towards a fund which he proposes to call "The Hospitals' Century Fund," with the object of freeing the hospitals from debt. The gross amount of the debit balances of the various hospitals stands at present at about £26,000; and the Lord Mayor is anxious that these adverse balances should be discharged during his year of office, thus enabling the hospitals to commence the century free from debt. The Lord Mayor heads the subscription list with the sum of £200. Already £4039 have been promised towards this laudable object. The Lord Mayor's suggestion is a good one and there is every probability that the requisite amount will be obtained.

Low Death-rate of Liverpool.

At the weekly meeting of the Health Committee of the City Council held on Dec. 27th, 1900, the chairman congratulated Dr. E. W. Hope, the medical officer of health, upon the low death-rate at present prevailing in the city. The death-rate for the past week was equivalent to 18·6 per 1000, as

against 32·1 per 1000 for the corresponding period of 1899. This satisfactory feature in the health of the city is no doubt due to good management and improved sanitation on the part of the health department. 72 deaths took place in public institutions of which 10 were deaths of non-residents. The epidemic of peripheral neuritis still continues in the two workhouses recently alluded to in THE LANCET. I have not heard of any cases having been treated at the general hospitals.

Presentation to the Medical Officer of Health of Rochdale.

At a meeting of the Health Committee of Rochdale Corporation held on Dec. 28th, 1900, Dr. Joseph Henry, J.P., the medical officer of health of Rochdale, was presented by the chairman, on behalf of the members of the committee, with a handsome silver salad bowl on his completing 21 years' service as medical officer of health of the borough. Alderman Hardman, the chairman of the committee, in making the presentation, spoke in cordial terms of the manner in which Dr. Henry had performed his duties as medical officer of health. Some members had been associated with the work of the committee during all the time of Dr. Henry's service, and their esteem for him had grown as the years went on. In accepting the gift Dr. Henry warmly thanked the members of the Health Committee for the kindly thought which prompted the presentation of the gift, which he accepted as a manifestation of the goodwill which existed between the committee and himself. He assured them that he and the members of his family would value the gift as the expression of the good feeling entertained by the committee towards him.

Jan. 1st.

WALES.

(FROM OUR OWN CORRESPONDENT.)

Sanitary Authorities and Water-supplies.

AT the end of 1897 a circular letter was addressed by the Local Government Board to the sanitary authorities in England and Wales directing attention to the subject of the water-supplies of their districts and urging the importance of ascertaining whether the water delivered to consumers was fully protected from all risk of contamination. In many parts of Wales the water-supply is absolutely above suspicion, but in some of the more thickly populated districts epidemics of water-borne typhoid fever are not at all infrequent; yet it is doubtful whether in more than one or two instances any action at all was taken upon the communication from the Local Government Board. In strange contrast to this inertia is the activity displayed by the same authorities upon receipt at the end of 1900 of a circular letter from the Board recommending that samples of beer and other articles of food likely to contain arsenic should be obtained for analysis. Even the County Council of Glamorgan is not exempt from this criticism, for at the last quarterly meeting of this body, when the sanitary committee recommended the appointment of an inspector to act under the direction of the county medical officer of health in procuring evidence of the pollution of water-supplies the recommendation was strenuously and successfully opposed by the chairman of the local government committee, who immediately afterwards proposed that the inspectors under the Food and Drugs Acts be ordered to obtain for analysis samples of beer and of sweets, jam, golden syrup, and canned fruit. This proposition was unanimously carried. The medical officers of health for Cardiff, Rhondda, and Swansea, the three largest towns in Wales, have reported that after investigation they have been unable to obtain evidence either of any cases of sickness due to drinking arsenicated beer or of the presence of arsenic in the beer consumed in their respective localities. In Merthyr and in Blaina, on the other hand, it is reported that suspicious cases have been found of peripheral neuritis which may be associated with beer consumption. In connexion with this subject it is of interest to record that in a newly-erected hotel in Aberdare the pipes along which the beer is drawn from the barrels in the cellar to the beer-engine in the bar are of glass. The pipes rest upon long narrow wooden shelving, and breakages are rare.

A Convalescent Home for Cardiff.

A convalescent home for women and children has recently been established at Cardiff which will relieve somewhat the strain upon the wards of the general infirmary. The building utilised was formerly a private residence and stands in grounds at the outskirts of the town. The entire cost of acquiring the house and of making extensive alterations has been borne by the executors of the late Mr. James Pyke Thompson, and the maintenance of the institution is provided for by the income arising from a sum of money left by him. At present there is only accommodation for 12 patients who will be received without payment. The Cardiff Infirmary is entitled to the use of six beds. Hitherto the Porthcawl Rest was the nearest convalescent home available for Cardiff patients.

An Accident Hospital for Pontypool.

A movement has been started to establish an accident hospital in or near Pontypool to serve the eastern valleys of Monmouthshire, where the need for a properly equipped hospital has long been keenly felt. At a meeting of the promoters it was announced that 7000 workmen had each promised to contribute 1*d.* a week towards the support of the institution.

The Pollution of the Rhymney.

The river Rhymney, which divides Glamorganshire from Monmouthshire, has long been the cause of much concern to the county councils affected. A joint committee of the two councils was established to take united action in preventing pollution of the stream, and as the result of the pressure brought to bear by this committee several districts, notably Caerphilly, Rhymney, and Gelligaer, have been induced to spend considerable sums upon drainage schemes which will result in withdrawing sewage from the Rhymney river and thus lessening the amount of pollution. The work of the committee has been very much hampered because the Monmouthshire County Council declined to delegate to their representatives on the committee their powers under the Rivers Pollution Acts. The Glamorganshire County Council have therefore decided to dissolve the joint committee.

Prayer-meetings at Infected Houses: a Persistent Action in Wales.

At the village of Deri in the parish of Gelligaer, Glamorganshire, an outbreak of diphtheria took place five weeks ago, when five cases, including two deaths, were notified to the medical officer, Dr. W. W. Jones, Merthyr. During the month this number has been increased to 42, including 11 deaths. This abnormal jump caused an investigation to be made, when it was discovered that the people persisted in visiting infected houses, quite disregarding a printed notice prohibiting this wholesale method of spreading the disease. Verbal intimation was given at each house to isolate the premises as far as possible, but the inhabitants were determined to run the gauntlet of all possible risks, and they almost defied the efforts of the officials of the county council to prevent them from calling at any house which was infected. The situation was becoming a serious one. The sanitary inspector, hearing of a contemplated prayer-meeting at a house where a death had taken place, resolved that at all hazards he would prevent this and to do so he remained at the house during the whole of the afternoon prior to the day of the funeral. Towards evening, when he thought the prayer-meeting had been abandoned, he left the house for half an hour. During that time a few friends assembled and the meeting was held. Such determined recklessness on the part of the people of the house and those attending the meeting will not be met by a casual reprimanding, though the inflicting of a penalty for obedience to religious feeling will be very odious. Yet matters have now become so serious that it may be necessary to engage special constables to assist the officers in their endeavours to save the lives of people. It seems curious that such measures should be required in the twentieth century to enforce elementary precautions against the spread of an infectious disease.

Jan. 1st

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Rebuilding of the Royal Infirmary, Glasgow.

THE scheme for the rebuilding of the Royal Infirmary as a memorial of the Queen's Diamond Jubilee has advanced

a stage. At a recent meeting of the committee the report of the assessor on the plans sent in by the competitors was considered, and after a vote had been taken the plan submitted by Mr. James Millar, M.I.A., was adopted. It is perhaps noteworthy that the scheme selected by the committee is not the one placed first in order of merit by the assessor. The scheme adopted provides for the complete reconstruction of the infirmary. Provision will be made for nearly 700 beds and the arrangements in every respect are to be of the most modern type. The estimated cost is £224,500. Towards this sum nearly £100,000 have already been raised, and as the infirmary is the oldest medical charity in the city it is anticipated by some that a scheme which will make the institution one of the largest and most complete hospitals in the kingdom will be enthusiastically supported by the citizens. It is possible, however, that the new scheme for rebuilding may be submitted to some adverse criticism.

Meat Extracts.

Dr. Hugh Galt has presented to the Glasgow Philosophical Society a report on an examination of a number of well-known meat extracts all claiming more or less energetically to be concentrated foods. His verdict is entirely opposed to this claim, as his analyses show that not one of those examined contains more than a small proportion of nutritive matter. Their value, he concludes, is purely a stimulating one, depending entirely on the proportion of meat bases present.

The John Reid Prize.

This prize, which is intended to promote pathological research and is awarded for an investigation conducted in one of the medical schools of Glasgow, has been given for two years to Mr. John McIntyre of St. Mungo's College. Mr. John McIntyre's thesis was on Some Points in the Formation of the Connective Tissue of the Liver, with Special Reference to Hepatic Cirrhosis.

Medical Presentation.

Dr. A. Johnston, medical superintendent, and Miss Adams, matron of the Glasgow Fever Hospital, have received handsome Christmas presents from the nursing staff in appreciation of their efforts to secure the comfort of the nurses and other hospital workers.

Glasgow Corporation and Consumption.

A considerable number of years ago the Glasgow Medico-Chirurgical Society drew the attention of the corporation to the fact that tuberculosis is to be regarded as an infectious disease and urged the authorities to take the steps necessary to prevent the spread of the malady. The memorial in which these considerations were advanced was referred by the health committee to Dr. J. B. Russell, at that time medical officer of health to the city. Dr. Russell made a report on the whole question and this was published and widely circulated. The matter has not been allowed to rest. The corporation has now decided to confer with representatives of the Glasgow medical societies with a view to holding a meeting of the citizens for the purpose of educating public opinion on the necessity for providing in the interest of the public health sanatoria or hospitals for the isolation and treatment of consumptive patients. No doubt this determination has been aided by other influences, but the Glasgow Medico-Chirurgical Society may justly claim the credit of being one of the earliest educators of the public conscience as regards the infectious nature of pulmonary consumption. The original memorial drawn up by the society was signed, among others, by Sir William Gairdner and the late Professor Joseph Coats.

Aberdeen Hospital for Incurables.

At the annual meeting of the managers and subscribers held on Dec. 27th it was reported that on the ordinary income there was a deficit of a little more than £446, but owing to the receipt of legacies the deficiencies of the past and former years had been wiped out, and a favourable balance of £352 odd was left. The number of patients at the close of the year was stated to be 73.

Aberdeen Royal Infirmary.

The appeal issued in connexion with the annual Hospital Sunday collection to be made in the churches on Jan. 6th, 1901, states that between Jan. 1st and Dec. 22nd, 1900, the number of patients treated in the wards was 2596; the number who had received advice and medicine as out-patients was 3597; and the casualty cases (minor accidents) numbered 3534—total, 9727.

New Asylum near Aberdeen.

The Aberdeen City Parish Council have contracted with a local builder to execute the mason work of a new asylum at Kingseat, Newmachar, for the sum of about £30,000.

New Hospital in Banffshire.

Mr. James Campbell, Old Cullen, has intimated that he will be glad to give £3000 towards the cost of an isolation hospital for infectious diseases for Banff and the lower districts of Banffshire, including all the boroughs. The scheme has been favourably entertained by the various local authorities concerned.

Jan. 1st.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Health of Belfast.

AT a meeting of the Belfast City Council on Jan. 1st reference was specially made to the fact that in 1900 there was the lowest death-rate on record in Belfast, 21·3 per 1000. For the period between Nov. 18th and Dec. 15th, 287 cases of zymotic disease were reported—viz., 90 of typhoid fever, 53 of scarlet fever, 72 of simple continued fever, 33 of erysipelas, 24 of diphtheria, 11 of membranous croup, and four of puerperal fever. 231 deaths occurred from phthisis and diseases of the respiratory organs. The number of cases of typhoid fever notified and the deaths therefrom are steadily decreasing. The epidemic of scarlet fever seems to be subsiding. The assistant surveyor has been instructed to furnish an estimate of the cost of erecting an arrangement for the destruction of condemned meat (mainly tuberculous) at the abattoir similar to that in use at the Central Meat Market, London. This is due to the exertions of Dr. H. O'Neill, at whose suggestion a deputation from the market committee of the Belfast Corporation visited various places for the purpose of acquiring knowledge as to meat inspection.

The Royal Victoria Hospital, Belfast.

Dr. W. Calwell (one of the physicians) has been appointed to organise and to take charge of the new department for diseases of the skin; and Dr. R. J. Johnstone and Dr. V. G. L. Fielden have been selected as the new anæsthetists. Dr. Henry O'Neill (on resignation of the post of surgeon to the Royal Victoria Hospital) presented a gift of £100, which is, in accordance with his wishes, being utilised in the purchase of instruments and appliances for the benefit of patients under treatment. Mr. T. S. Kirk has been appointed to take charge of the Throne Children's Hospital, an annexe of the Royal Victoria Hospital.

Jan. 2nd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Cultivation of the Microbe of Soft Chancre.

AT a recent meeting of the Society of Biology M. Besançon, M. Griffon, and M. Le Sourd communicated to the society that they had succeeded in cultivating the microbe of soft chancre with great ease, although up to the present time its cultivation had been found very difficult. They used blood gelose as a culture medium, a substance which M. Besançon and M. Griffon had previously found singularly adapted for the growth of the bacilli of tubercle and of that of gonococcus and also of the coccus of meningitis. The three observers reported that some 24 hours after this culture medium has been inoculated with material from a soft chancre shining round colonies make their appearance which at the end of 48 hours become greyish and opaque. When taken up for microscopical examination they glide away before the platinum loop and when spread out on the slide are difficult to separate. They are seen to be formed of bacilli either isolated or grouped in a mass or sometimes in chains. Their morphology answers to that

which Ducrey, Unna, and Nicolle described as existing in microbes from the pus or sections of a chancre. In the liquid which collects at the bottom of the culture-tubes the microbe develops in a characteristic form—namely, as long slender chains. The organism preserves its vitality and virulence in the blood gelose for a long time. By using a colony taken from a culture of the eleventh generation the three observers were able to reproduce a typical soft chancre. Ducrey's bacillus was found to develop well in the liquid serum of a rabbit. This culture medium became turbid and full of little flocculent masses which under the microscope were seen to consist of bacilli growing in entangled chain forms. But their vitality in this medium was of short duration. M. Besançon and his co-workers consider that blood gelose is evidently the preferable culture medium for this organism, and think it possible that this method of examination may be useful for diagnostic purposes and do away with the necessity for having recourse to inoculation for proof of the nature of a chancre.

State Subvention for the Assistance Publique.

The Assistance Publique of Paris has to dispense very considerable sums of money and these are always increasing, although the receipts hardly increase at all. The Assistance has to provide hospital accommodation for a daily increasing number of patients—it provides alms, food, clothing, fire, and lodging for an ever-growing crowd of poor of a city the population of which is always being swelled by an influx from the country. As it is the municipal funds and the rates paid by Parisians which mainly make up the income of the Assistance it is obvious that Paris and the Parisians provide to a very large degree for the poor of the whole of France, and not merely for those of their own city. This is especially the case with the hospitals where innumerable patients from the country are treated, to say nothing of foreigners. These two classes have enormously increased of late owing to the Exhibition. Numbers of countrymen and foreigners who came to work there preferred to stay in Paris instead of going home, and a number of them, work having stopped, drift into vagabondage and swell the criminal classes. Those who remain honest are very hard put to it, and the funds of the Assistance have been very strained in providing for them. The Municipal Council in view of these facts has passed a number of resolutions, amongst others one to the effect that donations, &c., and work should be reserved by preference for those poor who have lived in Paris for a certain number of years. With regard to the hospitals, M. Gelez gave it as his opinion that Paris could not continue to be a central hospital for the whole of France without the help of the whole country, and that either the State or the Department should contribute. In the budget of the Assistance for 1901 the estimated receipts are 11,000,000 francs below the estimated expenses, and this deficit is in great part due to an expense of 3,500,000 francs incurred by Paris in providing for the provincial poor. The Municipal Council asks that the State should subsidise the Assistance Publique by a sum of 10,000,000 francs per annum.

Episodes of the Small-pox Epidemic.

A Paris medical practitioner has just formulated a complaint dealing with the following circumstances before the Syndicate of Medical Practitioners of the Seine. He was asked to vaccinate a member of a family whose medical attendant he had been for some years past. The patient was a young man who had that day to present himself before the Faculty of Medicine for registration and who had to be provided with a certificate of revaccination. Armed with the certificate of his medical man he repaired to the office of the Faculty and was there told that the certificate was of no use, but that he must go and be again vaccinated at one of the two re-vaccination stations appointed by the Faculty, which he accordingly did, although still bearing on his arms the marks of the vaccination performed that very morning. The council of the syndicate could only say that such proceedings were very annoying for the average general practitioner and many members of the syndicate were anxious to apply to the Faculty of Medicine to have these restrictions removed; but the president of the syndicate reminded the meeting that the Faculty was not responsible for the regulation, which was due to a decree of the Minister of Instruction bearing date Jan. 6th, 1891. Then was the time when protests should have been made. Another interesting case from the point of view of public health arose during the epidemic. The porter of a block of flats was attacked by small-pox. One of the tenants, who happened to be a lawyer, pressed the landlord to have the porter removed to the hospital and to have his rooms disinfected, for, as he said, every tenant passed the lodge every day and so ran great risk of infection. The landlord refused and so the lawyer haled him before the court to recover damages for the dangers to which he and other tenants had been exposed. But before the case came on the landlord gave in, and had the porter removed and his rooms disinfected. This was a regrettable result from one point of view, for the judgment of the court would have been of great interest to sanitarians.

The Sanatorium of Angicourt.

The sanatorium at Angicourt intended for the treatment of tuberculous patients is on the point of being opened. It has taken 14 years to build. I shall in my next letter lay before your readers some details of the working of the institution.

Dec. 31st, 1900.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Prolongation of the Medical Curriculum.

IT is announced that various alterations are to be made in the conditions under which medical qualifications are granted, and a Bill on the subject has been submitted by the Imperial Government to the Federal Council. The existing law, which states that a candidate becomes qualified on passing the State examination, is to be altered as follows: Candidates are to become qualified when they have passed the State examination and spent a year in practical work. A qualification may be refused to candidates who have committed grave criminal or ethical misdemeanours. The Bill provides that the time of study will be five years instead of the present term of four and a half years. After having passed the State examination the candidates have to apply themselves to practical work under the direction of competent physicians and surgeons (probably in hospitals only, though nothing has yet been decided). The fees for the preliminary examination will be raised from 36 marks (£1 16*s.*) to 90 marks (£4 10*s.*), and the fees for the State examination will be 200 marks (£10). The study of medicine, which has hitherto been restricted to the pupils of the "Gymnasia," will now be thrown open to the pupils of the "Realgymnasia" and the "Oberrealschulen." Only abstracts of the Bill have as yet been made public. I will return to the subject when more particulars are known. The prolongation of the curriculum, which hitherto has occupied four and a half years and in future will occupy six years, including the practical year, will make the study of medicine rather expensive, but it is very doubtful whether the present rush to a medical career will be checked by the additional expense, because the area from which students are drawn will be enlarged by the admission of the new class of pupils coming from the "Realgymnasia."

Statistics of the Medical Profession.

Dr. Schwalbe's Medical Directory for 1901 has just appeared. The statistics in this valuable book show that the number of medical men in Germany has again increased, being now 27,374, or 2·6 per cent. more than in the previous year. In 1899 the increase was 3·6 per cent.; between 1894 and 1898 it was from 3·6 to 3·9 per cent. In Prussia there are 16,498 medical men, in Bavaria 3036, in Saxony 2048, in Würtemberg 881, in Baden 1087, in Hesse 683, in Alsace-Lorraine 683, and the remainder in the other States of the Empire. In 1900 there were 5·24 medical men for each 10,000 inhabitants, the proportion being 5·11 in 1899. On an average 5·06 medical men resided in an area of 100 square kilometres (38 square miles) in 1900 and 4·94 in 1899, but this number varied very much in the different parts and provinces of Germany. In Saxony, for instance, there were 13·66 medical men on the above area; in Prussia, 4·73; and in Bavaria, 4·00. In several districts of Prussia the proportion was exceedingly small, being only 0·99 in the district of Cöslin and 1·11 in the district of Gumbinnen. Also in some districts of Bavaria there were only 1·68 medical men on 100 square kilometres. As to the great towns, Berlin has 2360 medical men, as compared with 2314 in the previous

year, being one medical man for each 798 inhabitants; Munich has 694 medical men, Hamburg 585, Breslau 545, Dresden 428, Leipsic 416, Cologne 338, Frankfort 334, and Strassburg 213. The above statistics have been published by Dr. Heiman in the *Deutsche Medicinische Wochenschrift*.

Local Taxation of the Medical Profession.

By a recent law every medical man is required to pay a certain sum to the medical chamber of his district, and the money thus collected is to be used for the expenses of the chamber and for a fund to support distressed medical men of the district or their families. It is left to each chamber to fix the amount to be paid in this way and to decide whether it shall be uniform for all or regulated according to the income of individual practitioners. This question was discussed at a recent meeting of the medical chamber of Berlin and the province of Brandenburg. The committee proposed that a uniform rate of 10 marks (10*s.*) should be paid by every practitioner of the district and that an additional sum should be charged to those earning more than 3000 marks (£150). After a long and animated debate the chamber adopted these proposals. As to the fund for the support of distressed members the chamber was of opinion that a scheme of regulations should be prepared by a special committee and afterwards submitted for the consideration of the chamber.

Dec. 31st, 1900.

ROME.

(FROM OUR OWN CORRESPONDENT.)

The Medicinal Prophylaxis of Malaria.

IT has been abundantly demonstrated that protection against the bites of mosquitoes is an effectual measure in the prophylaxis of malaria. It has also been proved that much may be done to limit the extension of the disease, at any rate in suitable localities, by destroying the mosquitoes themselves both in their larval and adult states. But the difficulties encountered in carrying out such measures in practice efficiently and on a large scale have led several investigators to attempt what is undoubtedly the ideal method of prophylaxis—namely, the immunisation of the human organism against the infection. Various agents have been used more or less successfully with this object, but none with more encouraging results than the medicinal substance euchinin employed by Professor Celli. This is an almost tasteless crystalline derivative of quinine obtained by acting upon the latter with ethyl-chlorocarbonate. It is prepared in tabloids by Zimmer of Frankfort, and is given in doses of half a gramme (seven and a half grains) per diem for adults and a quarter of a gramme for children twice daily before food. Its administration in this way, even when continued for months, does not appear to give rise to any ill-effects and can therefore be begun at the commencement of the malarial season in June and kept up regularly without inconvenience until its termination at the end of November. For these reasons it was selected by Mori[1] for a series of experiments which he has carried out under Professor Celli's supervision during the past season in the Roman Campagna at three places, all with a highly malarial reputation. The subjects of the experiments were selected from six families of peasants and numbered 42 individuals, 16 of whom resided at Amatello, 14 at the Affitti del Gotti, and 12 at the Caldanello and Lavoriera Bacci. In each of these localities there were other persons who served as controls. Of the first group of 16 subjected to the euchinin treatment 6·25 per cent. sickened, while of the controls 81 per cent. took fever. Of the second group of 14 the percentage affected was 28·57, whilst among the unprotected it was 85·76. (This locality is at all times extremely unhealthy.) Of the third group, numbering 12, none contracted malaria, whereas among the controls 75 per cent. were affected. The total results were therefore as follow. Of 42 persons living in malarious surroundings subjected to the preventive treatment by euchinin only five, or 11·9 per cent., became infected, while of 47 persons not so protected but living otherwise under the same conditions 39, or 82·97 per cent., were attacked. It should be added that in those who took the infection, notwithstanding the use of the euchinin, the disease showed itself in a very mild form easily cut short, except in one case of quartan fever, by ordinary treatment, whereas in those not immunised the infection took severe intractable forms with a tendency to successive relapses.

[1] Relazione sulla profilassi della malaria coll'euchinina del dott. Antonio Mori. Il Policlinico, sezione pratica. An. vii., fasc. 8.

Dec. 29th, 1900.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

A Novel Application of Vaseline in Surgery.

A VERY interesting application of vaseline for surgical purposes has been made by a well-known Vienna surgeon, Dr. R. Gersuny. Without previous experiments on animals Dr. Gersuny made a trial of vaseline injected under the skin or mucous membrane as a substitute for some of the artificial contrivances of the surgical instrument maker. His first case of importance treated in this way was operated on a year ago. The patient was a girl, 18 years of age, on whom a successful operation for cleft palate had been performed, but her voice remained nasal as before the operation; by injecting vaseline under the mucous membrane of the velum palati and uvula an artificial obturator was produced the effect of which was that her speech became normal and even difficult consonants like "g" could easily be pronounced. In this case the submucous injection of the vaseline caused considerable pain for the first two days, perhaps on account of the pressure exerted by it on the sensitive bones of the palate, but the pain soon subsided. The injection has remained in position till now—namely, for a period of more than a year—without any disagreeable consequence, and the compact mass formed by the vaseline has not undergone any change in its size or shape during the whole time. In some other cases where this method was tried no pain resulted from the injection of the vaseline. An injection of cocaine is generally given before the injection of the vaseline. The effect produced by the vaseline—namely, the filling out of a cavity or the formation of an artificial protuberance—remains unaltered for many months. Dr. Gersuny has operated in this way on an Indian lady from Bombay suffering from congenital depression of the nose, for which a plastic operation was not considered advisable by the various surgeons who had been previously consulted. A very important use of this method has been made by Dr. Gersuny in the treatment of incontinence of urine, and a successful case of this kind was shown lately at a meeting of the Vienna Obstetrico-Gynæcological Society. The patient was a woman, aged 25 years, who suffered from vesico-vaginal fistula, the result of parturition. The fistula had been operated on, but the sphincter vesicæ remained inefficient. With a view to the remedying of this latter condition torsion of the urethra had been performed by a surgeon, and as the state of the patient did not improve she had been operated on by Dr. Gersuny himself six times since 1896, but on account of ulcerative processes these operations (torsion of the urethra) did not produce any lasting benefit. In July, 1900, the patient came again under the treatment of Dr. Gersuny with almost complete incontinence of urine. As the urethra had been so much lacerated by the previous operations Dr. Gersuny tried to produce closure of the vesical orifice by an artificial annular mass formed by injections of small quantities of vaseline into the prolapsed folds of the mucous membrane of the bladder. The injections were made through the mucous membrane of the vestibulum and through the vagina in the neighbourhood of the vesical orifice. The total quantity of vaseline injected was 3·3 cubic centimetres. After the operation the incontinence ceased, but in a few days it commenced again when the patient was walking or sitting. A second injection of vaseline was therefore made by which the deposit formed around the vesical orifice was so much thickened that a firm ring projecting into the vagina resulted. After the second injection she was able to retain her urine for some hours: she then complained of tenesmus for three days (she was also suffering from gonorrhœa). But on the fifth day after the second injection of vaseline she had regained control of her urine so that when walking she remained dry for one and a half hours. Four weeks later she could retain her urine for five hours even when walking. The vaseline deposit, which was about as large as a cherry, remained of the same size during the whole period. At the

present time, five months after the operation, the state of the patient has not changed; she can hold her urine for five or six hours when in the erect posture and from 10 to 12 hours when recumbent, and the capacity of her bladder now amounts to 350 cubic centimetres (12 fluid ounces). Dr. Gersuny employs for his injections the unguentum paraffini of the Austrian Pharmacopœia, melting at 40°C. The vaseline is first sterilised by boiling and is injected in a semi-liquid state. It does not produce any inflammation, but it seems that slight proliferation of the connective tissue takes place round it so that the vaseline becomes encysted. The histological changes produced by the injections are now being studied at Dr. Gersuny's laboratory, and experiments on animals are being made for the same purpose. The course of the cases treated up to the present proves that the vaseline remains unaltered in the place where it was deposited, that it does not become absorbed, and that it is without action on the tissues of the body. The size and shape of the vaseline deposit have not changed since the date of the operations, though some of them were performed more than a year ago. The changes in the connective tissue around the injected vaseline seem to be caused by mechanical pressure, and they are somewhat analogous to the very marked effects produced by the chemical action of Professor Lannelongue's injections of chloride of zinc. It is obvious that this method may find a very wide use in surgery, especially for elevating and supporting the skin over unsightly depressions, for the formation of artificial obturators, and for the treatment of various prolapses, as for instance of the rectum. The effect of a pessary might also be produced by circularly arranged injections of vaseline under the mucous membrane of the vagina, as has been shown recently by a case of vaginal prolapsus successfully treated in this way at the gynæcological clinic by Dr. Halban. At Dr. Gersuny's hospital experiments are now being made on the prevention of ankylosis after resections of joints by interposing vaseline partitions between the ends of the resected bones.

Dec. 28th, 1900.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Canadian Beer.

THE alarming news from Manchester in reference to the deaths and wide-spread illness through beer-drinking has caused some little concern to the lovers of that beverage in Canada, and inquiries have been numerous as to whether the same misfortune might not occur here as has occurred in Manchester and its vicinity. The vice-president of the Canadian Breweries (Limited) has, however, given out a statement to the press which will no doubt quiet any alarm that may have been engendered by reports from the mother country. Canada has never adopted the "free mash-tun" principle, and the law here provides that no substitute whatever for malt shall be used, as the duty is levied directly on the malt and no further duties are imposed on the beer produced. In Canada all beer is manufactured exclusively from malt and hops and no substitutes are permitted for these substances under heavy penalties. It is a well-known fact that Canada produces the finest barley grown on this continent and therefore the drinkers of Canadian beers have two substantial guarantees of purity which are said to be absent in England and the United States, the two great countries which have adopted the "free mash-tun" principle—(1) that no substitute for malt is permitted, and (2) that owing to the high duty on malt only that made from the choicest barley may be employed with economy.

New Civic Hospital for Montreal.

Last week representatives from all of the hospitals in Montreal, both French and English, met the city council and perfected plans for the immediate erection of a new hospital for contagious diseases, as the present one is a very antiquated structure. Four pavilions for hospital purposes will be erected with a central administration building. Each pavilion will be of two floors containing the necessary accommodation for about 50 beds, with 12 beds for private cases. There will be provision made for all cases of diphtheria, scarlet fever, small-pox, measles, typhoid fever, and other infectious diseases liable to break out at any time in the city. The administration building will contain the medical officers' apartments, observation-rooms, &c. A fine block of land has already been secured. The control of the institution will be vested in a joint board of nine members, five of whom, including the chairman, will be appointed by the city council, and two by the executives of the English hospitals, while two will come from the French hospitals. All matters of finance and expenditure by this board will be subject to ratification by the city council. The estimated cost will be $100,000, which will be raised by a special loan.

Manual Training Schools.

Through the generosity of Sir William Macdonald of Montreal manual training schools will, after Jan. 1st, 1901, be a part of the public school system in every province in this Dominion. These schools will be established in the following places: Charlottetown and Summerside, Prince Edward's Island; Truro, Nova Scotia; Fredericton, New Brunswick; Waterloo, Knowlton, Bedford, Montreal, and Westmount, Quebec; Ottawa and Brookville, Ontario; Winnipeg, Manitoba; Regina and Calgary, North-west Territory; and Victoria and Vancouver, British Columbia. Arrangements have been made for five instructors in Winnipeg alone, where 1000 boys will take the course. These classes will be made up from the three highest forms in the public schools in the places named; and the teachers, in all about 30, have come, or are coming, from England and the United States under three-year engagements. On Jan. 1st 5000 boys will be taking this course. Sir William Macdonald provides all the equipment of every school and pays the salaries of all the teachers and the cost of maintenance for the three years.

The Smoke Nuisance in Toronto and Montreal.

Toronto has just completed a costly new city hall, and as it is becoming discoloured by the smoke of a large industrial establishment in its immediate neighbourhood the city council has taken up the question of compelling all manufacturers to consume their own smoke. Some 20 years ago Professor Carpenter, the eminent physiologist, visited Toronto and was then very much surprised that a city of such beauty and such salubrity of climate should be befouled, and have the health of its citizens jeopardised, by the ever-pouring out of these clouds of black smoke from the tall chimneys of the great manufactories of the city. Montreal suffers greatly from the same nuisance, and it is understood that the city fathers of that metropolis are to follow the lead of Toronto in maintaining a purer atmosphere for its citizens. Cape Breton is a part of Canada which is now passing through a period of great development through the energy of the well-known Boston capitalist, Mr. Henry M. Whitney. This gentleman believes that the best way of dealing with this smoke nuisance in a satisfactory manner is to provide smokeless fuel, which he is now doing on a large scale for the city of Boston. He has erected 400 by-product coke ovens in which the coal of Cape Breton is converted into a cheap smokeless fuel. He states that the gas, tar, and ammonia which are saved more than pay for the trouble of converting the coal into coke. When this fact becomes to be generally recognised in Canada its cities and towns will produce a purer atmosphere for their inhabitants.

Free Consumption Sanitarium for Toronto.

The National Sanitarium Association which controls the Muskoka Cottage Sanitarium at Gravenhurst has offered to construct, equip, and maintain an institution for the consumptive poor of Toronto, without asking any municipal aid from the city on capital account, with the exception of the ordinary per diem hospital allowance of 40 cents for each patient. The erection of the building will be begun at once and it will be ready in a year for the accommodation at first of 50 patients. This accommodation will be for those patients who are in the very first stages of consumption, and the association proposes to erect the institution in the immediate neighbourhood of the Muskoka establishment. Arrangements have already been made with the Grand Trunk Railway Company for free transportation of 100 patients per annum to and from Gravenhurst, with half rates for all over 100. The advantages for its location in Muskoka are the climate, the site, and the suitability as already demonstrated by the results achieved at the Muskoka Cottage Sanitarium. When this part of the work is under way the association will then take up the question of providing accommodation for advanced cases at

a distance from the city of not more than five or six miles. Toronto was about to submit a by-law to the ratepayers for funds to the amount of $50,000 towards this purpose, but the offer of the National Sanitarium Association will now render this unnecessary.

Providing for the Insane in Ontario.

The Government of the Province of Ontario has lately been coming in for some severe criticism at the hands of the medical and lay press for its failure to provide ample and proper accommodation for the insane of the province. Nearly 100 of these unfortunate people can be found in the common gaols, and it is said that in Toronto alone some 49 lunatics are confined who are awaiting transference to the asylums. These, however, are all full, so the lunatics must continue to be housed with thieves and other criminals. Work is being pushed on at the old Victoria College at Coburg, which, when completed, will accommodate 200 patients, and a new boys' reformatory is about to be erected in Oxford county, when the present reformatory at Penetang will be available for further accommodation for the insane. With this added increase to their accommodation the Government will hereafter endeavour to keep abreast of the growing requirements of this unfortunate class of the community.

A Toronto Physicians' Protective Association.

In its November issue the *Dominion Medical Monthly* advocates the formation of the above association. It states that in Detroit an organisation of this character has been formed and that over 400 of the physicians of that city have signed the roll of membership and that the organisation is proving a great benefit to the profession in that city. Other cities of the United States are said to be following in the footsteps of Detroit; in fact, organisation amongst medical men is in the air across the border. It appears that there has been some quiet talk going on among the members of the medical profession in Toronto tending to the formation of some sort of protective association, though on what lines is not apparent. There is, no doubt, wide room for such an organisation, and it is altogether probable that the near future will see something tangible done in the way of lightening the burdens under which the profession suffers in this city. Toronto is a rather conservative city—an attribute which has to a great extent been incorporated in the medical body—but when professional organisation has proved to be successful in neighbouring cities the benefits to be derived therefrom cannot long be resisted.

Toronto, Dec. 17th, 1900.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Typhoid Fever prevented by a Filtering Plant.

THE city of Albany formerly had an evil reputation because of the prevalence of typhoid fever. It obtained most of the water it used from the Hudson river, which was contaminated by sewage from all the towns and cities along the Mohawk and the Hudson rivers and their tributaries, some of which penetrate into Massachusetts and the border factory towns in the Berkshires. Strangers visiting Albany, many of them members of the Legislature or students attending the schools, sickened and died. No family in Albany of any prudence drank water from the Hudson river unless it had been first boiled and put through a good filter. Thousands of persons never drank any of the water provided by the city but bought spring water which was peddled through the streets. Nevertheless, there were a large number of fatal cases of typhoid fever in the city and Albany suffered in reputation. In 1896 the Board of Water Commissioners changed the intake of water for the city, which drew from the Hudson river opposite the heart of the city and below some of its sewers, two miles further up the river, to a point above all the local sources of pollution, and pumped the water by low-lift pumps to a settling basin, from which it could flow to sand filters and be purified. The water after being filtered is pumped to reservoirs on the hills west of Albany and thence is distributed through the city. A small part of the city is, however, still supplied with the unfiltered water. The report of the first year's results is as follows. The bacterial removal has averaged 99 per cent. For nine months of this year there have been reported to the Board of Health 30 deaths from typhoid fever. Of these, 12 deaths were alien cases—i.e., the attending physician has reported that the patient contracted the disease outside of the city—four cases were "unaccounted for" and occurred in institutions where it was impossible to obtain information concerning them, or else they lived within the city limits, but in localities where they did not have a city water-supply. Of the remaining 14 cases one occurred in the part of the city supplied with unfiltered water, five occurred in the portion of the city supplied with mixed filtered and stream water, and eight occurred in the section of the city supplied with only filtered water. This number of deaths reported, 30, compares favourably with 83 deaths reported for the same months in the year before the filter was put in operation. The average number of deaths for the nine years previously to the construction of the filter plant was 67, so that more than 50 per cent. decrease in the deaths from this disease has followed on the new works.

Bureau of Animal Industry.

This bureau of the United States Government reports that during the year the number of abattoirs and packing-houses receiving the benefit of inspection was 148 in 45 localities, as against 138 in 41 localities in the preceding year. The total ante-mortem inspections of cattle aggregated 53,067,994; the animals rejected, subject to post mortem, were, at abattoirs 5958, and in stock-yards 153,561. The total post-mortem inspections were 34,737,613 and the total carcasses condemned were 61,906. In the microscopic inspection of pork 999,554 carcasses were examined. Of these but 19,448, or 1·95 per cent., were found to contain living trichinæ. The work of preparing serum for treating hog cholera and swine plague and experiments in treatment therewith are continued, with results which, while they do not justify definite conclusions as yet, are sufficiently encouraging to justify continued experiments, including some on entirely new lines. With regard to rabies, the secretary declares that this disease is unfortunately on the increase in the United States and that local authorities in most cases have not efficiently controlled its outbreaks. He also earnestly recommends an inspection of dairy products designed for export. Elaborate work in the investigation of food adulteration has been continued.

Proposed Change in the Management of New York City Hospitals.

The Charter Revision Commission has proposed an amendment which provides that on Feb. 1st, 1902, Bellevue, Gouverneur, Harlem, and Fordham Hospitals, and the Emergency Hospital for Women, shall be taken from the Department of Public Charities and be vested in a board of trustees appointed by the mayor. The city hospitals would, therefore, be brought under the same system of control that prevails in private hospitals.

Massachusetts State Sanatorium for Tuberculosis.

From the fourth annual report of this institution, the first established in this country, the following facts appear. 132 patients remained from one to 19¾ months. In 82 incipient cases 53 patients were dismissed as apparently cured, 28 were improved, and one was not improved; none died. Of moderately advanced cases (40 in all) six patients were dismissed as cured or the disease arrested, 18 were improved, 15 were not improved, and one died. Of the patients in 10 far advanced cases three improved, six did not improve, and one died. The total was 132; of these 59 were apparently cured or the disease was arrested, 49 were improved, 22 were not improved, and two died. Dr. Bowditch, the visiting physician, says, "The chief value of such an institution as this sanatorium is its educational influence upon the community at large. Abundant and gratifying proofs of this are constantly being shown to us by the numerous letters received from former patients, telling us of their improved methods of life and their endeavour to teach their relatives and friends the importance or fresh air, good food, and regular living as the best method for the prevention of disease. The sanatorium is, therefore, in one sense a great educational establishment, and as such should receive the hearty and generous support of everyone who is desirous of combating the ravages of tuberculosis."

Separate Prisons for Tuberculous Convicts.

Dr. W. H. Blake, physician to the board of inspectors of convicts for Alabama, states that the statistics of deaths among the convicts in the Alabama State prisons for the

past 20 years show that for the first half of this period tuberculosis caused 20·3 per cent. of the total mortality; for the latter half it caused 42 per cent. In the penitentiaries of the different States, of the total deaths, the percentage caused by tuberculosis reads thus:—Mississippi, 20 per cent.; Arkansas, 20 per cent.; Florida, 30 per cent.; Ohio, 31 per cent.; Michigan, 33 per cent.; Alleghany County Workhouse, Pa., 33½ per cent.; Virginia, 41 per cent.; Kentucky, 42 per cent.; Joliet, Ill., 70 per cent.; Huntsville Penitentiary, Texas, 33 per cent.; Washington, 16 per cent.; Connecticut (1898), 60 per cent.; and in 1897 every death that occurred in this penitentiary was caused by tuberculosis. In the Alabama convict institutions the inmates are not kept in separate cells, but from 50 to 100 are confined together in one large cell. Tuberculous convicts, unless in an advanced stage of the disease, are shut in with the healthy inmates; the consequence is that the prison is to a large extent a death-trap and the mortality from phthisis is increasing. Dr. Blake urges a separate camp for the tuberculous convicts, the further from the other prisons the better, in order to give the non-tuberculous prisoners the greatest possible immunity from the disease. This would give the tuberculous man better treatment and the healthy man a chance to remain well. In this matter the duty of the State is plain—it has the right to deprive the offender of his liberty but it has not the right to deprive him of his health.

Dec. 19th, 1900.

Obituary.

THOMAS TAYLOR, M.R.C.S. ENG., L.S.A.

ON Dec. 23rd there passed away one of the best-known practitioners of East Essex and one of the few now left who have served under the old apprenticeship system. Born in 1819, Thomas Taylor when 15 years of age was apprenticed for five years to Mr. Hester, a prominent surgeon at Abingdon. On the termination of his articles he came to London and entered at St. Bartholomew's Hospital, living whilst there in the house of Mr. Stone, the then medical officer to Christ's Hospital. Here Taylor's love of nature asserted itself, for he did his best to cultivate a window garden. Qualifying M.R.C.S. Eng. in 1842 and L.S.A. in 1843, he shortly afterwards obtained the appointment of house surgeon at the Essex and Colchester Hospital, where he remained till 1853, when, being desirous of settling down, he purchased a practice in the village of Bocking, where he remained for the rest of his life.

Thomas Taylor possessed a strong and attractive personality and was a familiar figure in the district where he lived. He delighted in seizing opportunities for quietly and unostentatiously giving pleasure to others and he was a strong supporter of the Royal Medical Benevolent College, having acted as local secretary for some years. His professional services were highly appreciated, his practice extended over a wide district, his opinion was frequently sought in consultation by his colleagues, and he always kept himself well abreast with the advance of medical knowledge. To his patients he was the same to all alike, gentle and sympathetic; and as he knew the personal history of a large proportion of them and was gifted with sound judgment his advice was often asked on other than professional matters. Taylor's mind was essentially a scientific one; his interests outside his profession were in horticulture, geology, natural history, and microscopy, but particularly the first-named, for his acquaintance with gardening matters and with those interested in the same pursuit was extensive, and there are many gardens scattered over the country containing flowering plants the original stock of which was contributed by him. A few years back he found that he was suffering from glycosuria, on Dec. 20th lung symptoms showed themselves, on the 22nd coma set in, and the end came early and peacefully on the 23rd. The last rites were held on Dec. 27th, when a congregation which filled the parish church of Bocking assembled to express the esteem with which he had been regarded. Mr. Taylor was twice married and leaves behind him a widow, two sons, both in the medical profession, and two daughters, who have each married a medical man.

Medical News.

INFECTIOUS DISEASES IN LEICESTER.—The Sanitary Committee of the Leicester Town Council report that during the past 12 months the following certificates have been received. Diphtheria, 1415; scarlet fever, 797; erysipelas, 215; typhoid fever, 113; puerperal fever, 14; total, 2554.

THE Ipswich *Evening Star* of Dec. 29th, under the heading of "A Testimony to Antitoxin," gives a brief account of a testimonial recently presented to Mr. E. A. Hunt of Colchester in appreciation of his services during an epidemic of diphtheria which lately prevailed in the village of Old Heath. The testimonial was signed by 140 persons and was accompanied by a silver matchbox and a sovereign-case purchased by subscriptions limited to 6*d*.

THE LATE DR. A. LOWE.—Dr. Alexander Lowe died at his residence, Bailey-street, Brynmawr, Breconshire, on Dec. 26th. The deceased, who received his medical education at the University of Glasgow, graduated as M.B. and C.M. in 1882, and shortly afterwards commenced practice in Brynmawr. He was medical officer of health of the Llanelly Rural District Council and district medical officer of the parish of Llanelly. He was also surgeon to the collieries and a certifying factory surgeon for the district. Dr. Lowe, who had been for 18 years in practice at Brynmawr, was very highly esteemed in the town and neighbourhood and much regret is felt there at his early death.

FATAL DENTAL CASE.—An inquest was held at Newport (Mon.) on Dec. 28th and 31st, 1900, upon the body of a collier, aged 21 years, who had died on Dec. 27th at the dental surgery of Mr. H. W. Griffiths, L.D.S. R.C.S. Irel., of Newport, after having had 11 teeth extracted under nitrous oxide gas and ether. According to the report which appeared in the *Western Mail* Mr. Griffiths in his evidence stated that shortly after the operation had been successfully performed the deceased sprang up in the chair and gasped. Mr. Griffiths felt for an obstruction in the throat, but could find none. He applied artificial respiration and a medical man was fetched. A post-mortem examination showed that one of the sponges which had been used was fixed in the windpipe. Mr. Griffiths's female attendant stated that she believed she had taken out all the sponges from the patient's mouth. The jury returned a verdict that death was due to misadventure and that everything possible had been done for the deceased.

IMPORTANT SHIPPING CASE.—On Dec. 28th, at the Gravesend police-court, Henry Parry, the master of the steamship *Montery*, was summoned by the corporation of London, as the port sanitary authority, for an infringement of the by-laws made under the Public Health (London) Act, 1891, in failing to report to the medical officer of health on his arrival at Gravesend a case of dangerous infectious disease—viz., typhoid or enteric fever. Mr. Lewis Noad represented the owners, Messrs. Elder, Dempster, and Co., of Liverpool, and Mr. T. Vickery, the assistant City solicitor, appeared to prosecute on behalf of the corporation. Mr. Vickery, in opening the case, stated that the vessel arrived at Gravesend on Dec. 7th and was visited by the medical officer of health in conjunction with Her Majesty's Customs. In reply to the usual question as to whether all were well on board the master stated "All well" and subsequently signed a declaration to this effect, and further, that there had been no case of sickness during the voyage. On the following day it was found that the fourth engineer had been taken ill with typhoid fever on Nov. 14th and had been under treatment by the surgeon of the vessel since that date with the full knowledge of the master, who had entered the fact in his official log and had also reported it at Havre. The medical officer of health thereupon removed the patient to hospital and disinfected the vessel. These facts were not disputed by the defence and Mr. Noad on behalf of the master pleaded guilty and stated the circumstances under which the offence was committed. The bench imposed a penalty of 40*s*. with costs.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

BARRACLOUGH, H., M.B., C.M. Aberd., has been appointed Assistant Medical Officer to the Lunatic Asylum at Porirua, New Zealand.

BELGRAVE, T. R., M.E. Edin., M.R.C.S., has been appointed Officer of Health to the Abbotts Local Board of Health, West Australia.

BELL, H. T. S., L.R.C.P. Lond., M.R.C.S., has been appointed Acting Visiting Medical Officer, Jubilee Sanatorium for Consumption, Dalby, Queensland.

BLACK, GEO., M.B., M.S. Glasg., has been appointed Medical Officer to the Mokikinui Coal Mines, near Westport, New Zealand.

BLAXLAND, H., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Superintendent, Hospital for the Insane, Gladesville, New South Wales.

BONNIN, J. A., M.B., B.S. Adel., has been appointed a Public Vaccinator for South Australia.

COOKE, T. A. B., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health, Neyland Urban District.

CORLIS, J., M.D., Ch.M. McGill Coll., Montr., has been appointed a Public Vaccinator for the District of Menzies, West Australia.

DUNCAN, WILLIAM, L.R.C.P., M.R.C.S. Edin., has been appointed District Medical Officer, Dover Union, vice J. Gordon, resigned.

ELVINS, R. S., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed District Medical Officer, Basingwold Union, vice W. C. Ellis, resigned.

GARDNER, T. FRED., M.R.C.P. Lond., has been appointed Physician to the Royal Boscombe and West Hants Hospital.

GODSON, HOWIE, M.R.C.S., has been appointed Medical Superintendent, Hospital for the Insane, Kenmore, New South Wales.

LAVERY, E. A., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Resident Medical Officer, Newcastle Hospital, New South Wales.

LEMIN, OSCAR, L.S.A. Lond., has been appointed Resident Medical Officer to the St. Marylebone General Dispensary, 77, Welbeck-street, Cavendish-square, W.

MUDGE, JAMES, L.R.C.P., L.M. Edin., M.R.C.S., has been appointed Medical Officer of Health, Ludgvan Urban Sanitary District, vice J. Q. Couch, resigned.

MULLEN, W. L., M.D., Ch.B. Melb., has been appointed *pro tem.* Medical Superintendent to the Sunbury Lunatic Asylum, Victoria, Australia.

MURRAY, BABINGTON STEUART, M.B., C.M. Edin., has been appointed District Medical Officer for Bovey Tracey and Ilsington (North Devon).

POOLER, J. R., L.S.A. Lond., has been appointed House Surgeon to the Birmingham and Midland Ear and Throat Hospital.

RIDDELL, JAMES, M.B., B.S. Melb., has been appointed Honorary Medical Officer at the Port Augusta Hospital, South Australia.

RIGBY, HUGH MALLINSON, M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Demonstrator of Anatomy at the London Hospital Medical College.

ROSS, CHISHOLM, M.D. Syd., Ch.M. Edin., has been appointed Medical Superintendent for the Insane, Callan-park, New South Wales.

ROW, L. E., M.D. Brux., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Acting Health Officer at Townsville, Queensland.

RUTHERFORD, A. H., M.B., M.S. Edin., has been appointed Government Medical Officer at Casino, New South Wales, and also Medical Attendant upon the Aborigines at Casino.

WEBSTER, W., M.B., B.S. Glasg., has been appointed Assistant Medical Officer to the Lunatic Asylum at Auckland, New Zealand.

WILLIAMSON, W. C., M.D., Ch.M. Irel., has been appointed Medical Superintendent, Hospital for the Insane, Parramatta, New South Wales.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ADELAIDE HOSPITAL, South Australia.—Two Resident Medical Officers for twelve months. Salary £120 per annum, with board, &c. Apply to the Agent-General for South Australia, 1, Crosby-square, Bishopsgate-street Within, London, E.C.

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Church-street, Birmingham.—Assistant House Surgeon. Salary £60 per annum, with apartments and board.

BOROUGH ASYLUM, Portsmouth.—Junior Assistant Medical Officer. Salary £120 per annum, rising by three equal annual increments to £150, with board, lodging, and washing.

BOROUGH OF RICHMOND (SURREY) AND THE HESTON AND ISLEWORTH URBAN DISTRICT JOINT ISOLATION HOSPITAL COMMITTEE.—Resident Medical Officer at the Isolation Hospital for Infectious Diseases other than Small-pox situate at Mogden, near Kneller Hall, Twickenham, unmarried. Salary £200 per annum, payable quarterly, with furnished house, coals, gas, and washing. Applications to the Clerk to the Committee, Hounslow, Middlesex.

BRIDGNORTH AND SOUTH SHROPSHIRE INFIRMARY.—House Surgeon. Salary £80, with board and lodgings in the infirmary.

COUNTY ASYLUM, Gloucester.—Junior Assistant Medical Officer, unmarried. Salary £120 per annum, rising £10 yearly to £150, with board (no stimulants), lodging, and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Glamis-road, Shadwell, E.—Pathologist and Registrar for one year.

EAST SUFFOLK AND IPSWICH HOSPITAL, Thorofare, Ipswich.—Two House Surgeons, unmarried. Salaries £100 for the senior and £70 for the second House Surgeon, with board, lodging, and washing.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark-bridge-road, London.—Senior Resident Medical Officer. Salary £70, with board and washing.

FISHERTON HOUSE ASYLUM, Salisbury.—Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and washing.

GENERAL HOSPITAL, Nottingham.—House Physician for two years. Salary £100, rising £10 a year to £120, with board, lodging, and washing.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, London.—Senior House Surgeon for six months. Salary at the rate of £60 per annum, with board, lodging, and washing in the hospital. Also Junior House Physician for six months. Salary at the rate of £30 per annum, with board, lodging, and washing in the hospital.

GUEST HOSPITAL, Dudley.—Senior Resident Medical Officer. Salary £100 per annum, increasing by £10 a year to £120, conditionally, with board, residence, attendance, and washing.

HOSPITAL FOR WOMEN, Soho-square, London, W.—Assistant Physician.

HULL ROYAL INFIRMARY.—Senior House Surgeon for two years, unmarried. Salary 100 guineas per annum, with board and furnished apartments. Also Senior Assistant House Surgeon for not less than one year. Salary £40, with board and lodging.

KENT COUNTY ASYLUM, Barming Heath, Maidstone.—Fourth Assistant Medical Officer and Pathologist for two years, unmarried. Salary £175 per annum, rising £5 a year, with furnished quarters, attendance, coal, gas, garden produce, and washing.

LIVERPOOL DISPENSARIES.—Assistant Surgeon, unmarried. Salary £100, with board and apartments. Apply to the Secretary, Leith Offices, Liverpool.

LIVERPOOL STANLEY HOSPITAL.—Third Resident Junior House Surgeon. Salary £70, with board and washing.

LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—Assistant Surgeon.

MILLER HOSPITAL and ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Resident Medical Officer for six months. Salary at the rate of £60 per annum, with board, attendance, and washing.

MONKWEARMOUTH AND SOUTHWICK HOSPITAL, Sunderland.—House Surgeon, unmarried. Salary £80 per annum, with board, residence, and washing.

NORTHAMPTON GENERAL INFIRMARY.—House Physician, unmarried. Salary £100 per annum, with furnished apartments, board, attendance, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Salary £140 per annum, all found except board.

QUEEN'S HOSPITAL, Birmingham.—Resident Surgeon for 12 months. Salary £50, with board, lodging, and washing.

RAMSGATE AND ST. LAWRENCE ROYAL DISPENSARY AND THE GENERAL HOSPITAL AND SEAMEN'S INFIRMARY.—Resident Medical Officer, unmarried. Salary £100 per annum, with furnished apartments, board, and attendance. £10 allowed for substitute during annual holiday.

ROYAL INFIRMARY, Newcastle-on-Tyne.—Accident Room House Surgeon for three months. Salary £25 for that period, with board, residence, and washing.

ROYAL SEA-BATHING HOSPITAL, Margate.—Assistant Resident Surgeon. Salary £52 per annum, with board and residence. Apply to the Secretary, Royal Sea-Bathing Hospital Offices, 30, Charing-cross, London.

SCHOOL BOARD FOR LONDON—EVENING CONTINUATION SCHOOLS.—Lecturers and Examiners in First-Aid and Home Nursing. Qualified practitioners (men and women). Apply to the Clerk of the Evening Continuation Schools Committee, School Board for London, Victoria Embankment, W.C.

SHEFFIELD ROYAL HOSPITAL.—Honorary Physician for Mental Diseases.

THE CHIEF INSPECTOR OF FACTORIES gives notice of vacancies as Certifying Surgeons, under the Factories Act, at Bolsover, in the County of Derby; at Market Bosworth, in the County of Leicester at Barnsley, in the County of York; at Arklow, in the County of Wicklow; and at Penshurst, in the County of Kent.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior Resident House Surgeon, unmarried. Salary £100 per annum, with furnished residence and board.

WEST DERBY UNION.—Resident Assistant Medical Officer for the Workhouse, Rice-lane, Walton-on-the-Hill, Liverpool. Salary £100 per annum, with first-class rations, apartments, &c. Subject to statutory deduction. Apply to the Clerk to the Guardians, Brougham-terrace, Liverpool.

WESTMINSTER GENERAL DISPENSARY.—Honorary Physician. Apply to the Secretary, 9, Gerrard-street, Soho.

Births, Marriages, and Deaths.

BIRTHS.

NEILL.—At 46, Melville-street, Edinburgh, on Dec. 31st, the wife of Charles Neill, M.B., of Ranaghat Medical Mission, of a son.

REYNOLDS.—On Dec. 25th, at Silverhowe, College-park, N.W., the wife of B. Gore Reynolds, M.R.C.S., L.R.C.P. Lond., of a daughter

MARRIAGES.

NEWTON—GRAY.—On Dec. 27th, at Marylebone Presbyterian Church, Upper George-street, W., Duncan Gray Newton, M.B., C.M. Edin., Brook-hill, Sheffield, to Janet Mackinnon, daughter of the late Archd. Gray, of Holland-park, W.

PANCKRIDGE—HOULGATE.—On Dec. 27th, at the Church of the Holy Redeemer, Clerkenwell, William Panckridge Panckridge, M.B., to Marie Houlgate.

DEATHS.

BURTON-BROWN.—On Friday evening, Dec. 7th, Dennis, son of F. H Burton-Brown, M.B., B.Ch., 3, Via Venti Settembre, Rome, aged 13 months.

POTTER.—On Dec. 30th, John Baptiste Potter, M.D., F.R.C.P., of George-street, Hanover-square, W., aged 61 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE YARMOUTH PRACTITIONERS AND THE FEES FOR LUNACY CERTIFICATES.

THE members of the medical profession at Yarmouth are well organised and they have made a good fight in regard to the abuses arising out of the medical aid societies. They are now contesting the question of fees paid for certificates of lunacy by the Poor-law guardians. This fee is only half a guinea and the practitioners are demanding a guinea. Recently there was a case of idiocy, but no medical man in the town would give a certificate and the guardians met on Dec. 28th to decide what was to be done. The claims of the medical men were supported by half the board, and the vote on the question resulted in a tie. The chairman, however, gave his casting vote against the proposal that the fee should be raised to one guinea. For the moment nothing further has been done, and, presumably the lunatic is still at large. The question arises whether, out of the many grievances that require redress, this matter is sufficiently serious to fight over. In any case, and in all these contentions, it is very important to secure the sympathies of the general public. Also it is very necessary to make it quite clear that a medical union is not constituted merely for the sake of improving the financial position of medical practitioners. The main purposes are the maintenance of the dignity of the medical profession and the progress of science, because the public at large is, or should be, equally interested with the members of the profession in these matters. Therefore the struggle should be not so much against insufficient remuneration as against those conditions of work which tend to degrade the profession. The practitioners at Yarmouth will, we hope, be able to prove that the public as well as themselves will benefit by the proposed increase in the fees for lunacy certificates.

AN UNDESIRABLE WHISKER.

To the Editors of THE LANCET.

SIRS,—I shall feel much obliged if some of your readers will advise me about the following case. A young lady patient four months ago had an alveolar abscess which she neglected, and the inflammation extended to the cheek, resulting in a large abscess which had to be opened externally. She presented herself the other day with a well-developed whisker on one side of her face. Naturally she is much concerned about this. Would the x-rays be the best mode of dealing with the case, and if so how should they be used? I shall feel much obliged for any suggestions in the matter.

I am, Sirs, yours faithfully,
Jan. 1st, 1901. M.D.

THE CHOICE OF A CEPHALOTRIBE.

To the Editors of THE LANCET.

SIRS,—Will any professional brother specially versed in such matters kindly inform me whether Simpson's cephalotribe (which I possess) would answer every purpose in cases where it should be considered necessary to make use of such an instrument? Dr. Galabin is in favour of Braxton Hicks's form, whereas Dr. Barnes, on the contrary, considers this pattern "too short," but recommends that of Dr. Fancourt Barnes "as the best he has used." Dr. Lloyd Roberts thinks highly of his own invention, whilst Dr. Kidd insists upon there being "no curve" in the instrument; yet these various instruments are all of greater length than Sir James Simpson's.

I am, Sirs, yours faithfully,
Dec. 26th, 1900. G. P.

TOO PERTINENT.

he *Evening News* is responsible for the following story:—

A doctor in the East-end of London had a long blank wall, fronting a big railway station. To him there entered an advertisement contractor with inviting terms for the garden wall as a hoarding. The doctor saw many fees to be had without attendance or medicine. He closed with the offer. But the first morning found a religious maniac had instructed the billposter to affix to the wall, "Thy days are numbered," in letters a foot long. The doctor considered the warning to his patients as too pertinent, and withdrew from the contract.

INCOME-TAX PAYMENTS.

To the Editors of THE LANCET.

SIRS,—With the income-tax at 1s. in the pound the amount payable by persons of even small means is very considerable, being one-half more than last year. It is therefore the more necessary to ascertain without delay whether or not it is possible to obtain a reduction in the amount payable, or, where the tax has been paid, a repayment of a portion. As most of your readers who are engaged in business are now ascertaining the amount of their profits for the year 1900, will you allow us to remind them that in such profits show a diminution they may be entitled to the repayment of a considerable portion of the income-tax paid in respect of the same? Many submit to overcharges, having failed on previous occasions to get their assessments reduced. In most cases the reason why they have failed is that they have not furnished proper accounts, while many have neglected to keep any accounts of their business transactions. If proper accounts be kept, or even if a proper cash account be presented (which is very simple by using the "Taxpayer's Cash Book"), there is but little difficulty in establishing a claim. Thousands of people pay taxes for which they are not liable, more particularly those whose incomes are derived from property and investments where tax is deducted before being paid to the recipients, or when dividends are paid "free of income tax." Where the income of the current financial year has all been received, claims can, in many cases, now be made for four years, and the sum repayable might in the case of private incomes alone exceed £42, to say nothing of tax allowed in respect of life insurance premiums even when the income exceeds £700. We shall be glad to advise any of your readers, gratuitously, whether they can make a claim for repayment if they send us full particulars of their incomes and a stamped addressed envelope.

We are, Sirs, yours faithfully,
THE INCOME-TAX ADJUSTMENT AGENCY, LTD.
12 and 13, Poultry, London, E.C.,
Jan. 1st, 1901.

HOW NOT TO DO IT.

A CORRESPONDENT forwards us the following advertisement which was left in the form of a card upon a patient of his at the same time as similar cards from the butcher and the chimney-sweep:—

SURGERY,
——STREET, ——

Legally qualified and experienced Physician and Surgeon.

HOURS.

Mornings, 9 till 11
Evenings, 6 till 9.
Sunday Evenings, 6 till 7.
Moderate fees.

This sort of thing should not be, and we hope that the "Legally qualified and experienced Physician and Surgeon" will make a note of what we have said. For the present we forbear from mentioning his name.

THE PROVINCE OF THE DRUGGIST.

AN inquest was held on Dec. 26th, at West Hartlepool, upon the body of a female child, aged three years. According to the evidence of the mother, the child had an abscess under her arm. For this she consulted "Mr. Clarkson the chemist," who told her to poultice it and also "gave her something to put on the place." The abscess "healed up nicely," but as the general health of the child was not good she went to Mr. Clarkson again who "gave her a bottle." The child seemed to be getting on all right but unfortunately she suddenly died. Mr. Clarkson in his evidence said, according to the report in the *Northern Daily Mail* of Dec. 27th, 1900, from which paper we have been quoting, that "he had not considered the child in any danger whatever. ..... When the mother came to him about the child's general health he gave her a soothing bottle. Judging from what he had seen and from what the mother said he thought death must have resulted from failure of the heart's action." A verdict was returned accordingly. It is not suggested that Mr. Clarkson's "something to put on the place" or his "soothing bottle" did actual harm to the baby, but, judging from the account of the case given by our contemporary, the druggist clearly went out of his province, which is always a very dangerous thing to do.

MEDICAL QUALIFICATIONS.

To the Editors of THE LANCET.

SIRS,—It is, of course, conceded that medical practitioners who have graduated as "Doctors of Medicine" from our different universities are legally entitled to add to their names the letters M.D. and to be styled "Doctors." It is also generally understood that Licentiates and Members of the Royal College of Surgeons are addressed as, and styled "Mr.," but the discussion has so far left undecided what is the proper title of the physician—"Mr." or "Dr." Several dictionaries which give an unprejudiced explanation of the title state that the term "Doctor" is used to denote one who treats diseases by means of internal remedies, and the term "Surgeon" one who practises external remedies or manual operations. Hence from this one would gather that all duly licensed practitioners of medicine as distinguished from surgery have the right to be styled "Doctor." I also venture to think that it is not generally known that the Licentiates, Members and Fellows of the King and Queen's College of Physicians, Ireland, are by virtue of the *original* Charter entitled to add M.D. after their names and to be styled "Doctors." A case to test this right was instituted by the University of Dublin *v.* King and Queen's College of Physicians, and heard before the Master of the Rolls. The decision given by this high legal authority was that although the diploma does not now entitle the holders to place the letters "M.D." after their names (which had been previously done since the establishment of the College, whose charter confers "the rights, style, title, and precedence of a Doctor of Physic" on its diplomates), yet in his opinion they had the right to the prefix of "Doctor." Another test case was submitted to the Attorney-General (afterwards the

distinguished Baron Deasy of the Court of Exchequer, Ireland) in 1861 as to whether the L.K. & Q.C.P.I. as such, were entitled to the degree of Doctor of Medicine and to use the letters M.D. after their names. His opinion was as follows: "I think the Licentiates and Fellows, as such, of the King and Queen's College of Physicians, are entitled to the degree of Doctor in Medicine and to use the letters M.D. after their names.—Signed, R. Deasy." Though we have no desire to place "M.D." after our names, yet we wish to assert that we have the legal right to the title and prefix of "Doctor," and that while by courtesy it is also usually extended to those who are physicians, yet they have no legal right to affix the title of "Doctor" to their names in documents, visiting-cards, or door-plates unless the charter of their College confers that right upon them. The whole question is based on the assumption that "Doctor" means "M.D.," whereas, as stated above, in most dictionaries "Doctor" means "physician."

I am, Sirs, yours faithfully,

Dec. 31st, 1900. K. & Q.C.P.I.

THE GIVING OF TESTIMONIALS.

A CORRESPONDENT has sent us two cards received from a masseur. The one bears his name, his address, and an intimation that he is "Certificated in Massage, Electricity, and the Nauheim treatment." The other is a copy of a certificate signed by a medical practitioner of Harley-street who is a graduate in medicine of the University of Cambridge and M.R.C.P. Lond. It is worded as follows: "This is to certify that on the termination of a three months' course of Lectures and Demonstrations in Medical Electricity, Massage, and the Nauheim Treatment, Mr. —— [the full name is given] passed an excellent examination, and that he is highly qualified to administer these treatments under medical direction." We think it extremely unwise of any medical man to give certificates of this kind. Of course, there is no harm in a medical man recommending any one whom he considers to be a skilled masseur or administrator of electricity to his patients or to other medical men who may be seeking such a person, but it is not fitting that a masseur should have in his possession for general distribution testimonials recommending himself signed by a medical man. The distribution of such cards as those we have referred to advertises the medical man quite as much as the holder of the certificate. Possibly the medical man in question may not be aware of the abuse of his certificate, but now that we have called his attention to the matter we hope that he will take such steps as he should do.

THE LEGALITY OF BRITISH QUALIFICATIONS ABROAD.

To the Editors of THE LANCET.

SIRS,—I shall be very much obliged if you will kindly inform me what are the necessary conditions of practice in Ontario, Canada, and if a holder of the triple qualification dated 1900 would require to take a Canadian qualification in addition.

I am, Sirs, yours faithfully,

Dec. 28th, 1900. H. M. ROBERTS.

*.** Practitioners must be registered by the Council of the College of Physicians and Surgeons of Ontario. In certain cases registration is optional on the part of the Council.—ED. L.

MILNE'S BATTIST AND ABSORBENT RIBBON GAUZE.

MILNE'S battist is a thin but strong waterproof fabric, prepared with india-rubber and intended as a substitute for oiled silk or gutta-percha tissue. The manufacturers claim for it that it is grease-proof and spirit-proof, and can be boiled for two hours without injury, thus rendering the same piece fit for use over and over again. It is said to withstand all antiseptics and to be imperishable and non-adhesive in any climate. Milne's sterilised absorbent ribbon gauze is used for the plugging of wounds and cavities in surgical operations, for which purpose it is made very soft and has a woven edge to prevent fraying. It is supplied in several widths and either medicated or plain as desired. These dressings are made by Mr. John Milne, the Galen Manufacturing Company, Ladywell, London, S.E.

THE QUESTION OF THE COMMUNION CUP.

To the Editors of THE LANCET.

SIRS,—The Vicar of Wragby, the Rev. E. H. Sankey, has written to the *Yorkshire Post* to point out that the danger of infection from the chalice is nothing like so great as that from the universal practice of kissing. "When people," he writes, "are prepared to abandon this it may be worth while to consider the possibility of making some change in the present way of administering the chalice." The Vicar of Wragby forgets that people with sore mouths are not likely to wish either to kiss or to be kissed. Such persons can abstain from kissing, but all cannot abstain from communicating with a good conscience.

I am, Sirs, yours faithfully,

Dec. 29th, 1900. M.B.

HOSPITAL APPOINTMENTS AND ADVERTISING.

IT appears that there was recently a vacancy for the post of surgeon to the Jessop Hospital for Women at Sheffield. Naturally this post is sought after, but we must confess that we were surprised to see in the *Sheffield Daily Telegraph* of Dec. 18th, 1900, an advertisement on page 4 covering one-third of a column in which the candidature, qualifications, and testimonials of a medical man, an aspirant to the post, were set out in full. A similar advertisement from another candidate covering over half a column appeared in the same journal for Dec. 20th, 1900, upon page 1. The gentlemen seeking the appointment were both University graduates, and judging from their testimonials singularly able and intelligent men. But we do not think that for a medical man to state his name, address, qualifications, and the work that he has done, in the advertisement columns of a lay, or, indeed, of any other journal is at all fitting. It is possible that the advertisements were inserted by the board of the hospital, or it may be that it is a rule of the hospital that when a vacancy occurs the candidates should be compelled to advertise in this way. If so, the sooner the rules are altered the better.

Jock.—The amount of public advertisement advisable where a man changes his address and desires to signify this to his patients must be left to the advertiser's taste. We can only say that it should be small and that the issue of a printed notice to all the patients on his books is a preferable proceeding. A newcomer starting in practice should not advertise the fact at all in the newspaper. He has no patients of his own on his books in the locality and the advertisement is therefore directed entirely at those of his fellow-practitioners.

Turiccasis.—Dr. Conan Doyle's book "The Great Boer War" will probably meet our correspondent's wants. See our review of this work in THE LANCET of Dec. 22nd, 1900, p. 1815.

J. L.—We do not recommend individual practitioners.

M.B., B.Ch.—There is no harm in accepting the offer.

Victor must consult his family medical attendant.

F.R.C.S. has taken the safer course.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 3rd, 1901.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb	Dry Bulb.	Remarks at 8.30 A.M.
Dec. 28	29·98	W.	0·08	52	48	47	43	47	Cloudy
,, 29	29·69	W.	0·09	62	45	39	37	39	Cloudy
,, 30	29·83	W.	...	52	51	39	43	44	Raining
,, 31	29·23	N.E.	0·74	52	43	40	43	43	Raining
Jan. 1	29·99	W.	...	43	42	38	37	38	Overcast
,, 2	30·18	W.	0·02	50	45	36	37	37	Foggy
,, 3	30·32	N.	...	43	41	37	40	41	Foggy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (7th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (8th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

WEDNESDAY (9th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.).

THURSDAY (10th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

FRIDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

SATURDAY (12th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (8th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—Address:—Dr. E S. Reynolds (Manchester): Recent Cases of Arsenical Beer Poisoning (with lantern demonstration).

SOCIETY FOR THE STUDY OF INEBRIETY (Medical Society's Rooms, 11, Chandos-street, Cavendish-square, W.).—3.30 P.M. Council Meeting. 4 P.M. Dr. A. E. T. Longhurst: Moderate Drinking, can it Injure Health? Visitors are invited to join in the discussion.

WEDNESDAY (9th).—HUNTERIAN SOCIETY (London Institution, Finsbury-circus).—8.30 P.M. Clinical Evening.

THURSDAY (10th).—BRITISH GYNÆCOLOGICAL SOCIETY (20, Hanover-square, W.).—8 P.M. Election of Officers for 1901. Specimens will be shown by Dr. Macnaughton Jones and Dr. Purcell. The President: Valedictory Address.

FRIDAY (11th).—BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION (11, Chandos-street, Cavendish-square, W.).—3.45 P.M. Cases and Specimens will be shown by Mr. Mayo Collier, Mr. Lennox Browne, Dr. Kelson, Dr. W. Wingrave, and Mr. Nourse. Postponed Discussion on Mr. Lennox Browne's Cases of Epilepsy in Relation to Adenoid Growths.

CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Papers:—Dr. Sidney Phillips: A Case of Fatal Pancreatic Cyst of enormous size Simulating Ascites.—Dr. F. E. Batten: A Case of Subacute Combined Degeneration of the Spinal Cord in Association with Pernicious Anæmia.—Dr. C. W. Chapman: A Case of Syphilitic Disease of the Aortic Valve.—Dr. H. Thursfield: Rheumatic Periostitis with Subcutaneous Nodules.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (7th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. F. Payne: Consultation. (Skin.)

TUESDAY (8th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. H. Campbell: Consultation. (Medical.)

WEDNESDAY (9th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—5 P.M. Clinical Lecture:—Mr. M. Morris.

THURSDAY (10th).—CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M. Mr. Lennox Browne: Obstructions in the Fauces and Naso-Pharynx.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

CHARING-CROSS HOSPITAL.—4 P.M. Dr. Green: Medical Cases. (Post-graduate Course.)

FRIDAY (11th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. R. Lake: Consultation. (Throat.)

During the week marked copies of the following newspapers have been received: *Brighton Gazette, East Daily Press (Norwich), Hull Daily Mail, Dundee Advertiser, Leicester Daily Post, Nottingham Daily Guardian, Wigan Observer, Glasgow Herald, Leeds Mercury, Nuneaton Observer, Bedford Record, Kentish Observer, Midland Counties Herald, Times of India, Pioneer Mail, Cheltenham Mercury, Surrey Leader, Whitby Gazette, Western Mail, Western Morning News, Bradford Observer, Ealing Guardian, Warrington Guardian, Scotsman, Architect, Builder, Citizen, Liverpool Daily Post, Health, Bristol Mercury, Sanitary Record, Yorkshire Post, Hereford Mercury, Poole Herald, Mining Journal, Jackson's Oxford Journal, Birmingham Daily Mail, Beverley Guardian, Normanton Herald, Tewkesbury Record, Belfast Evening Telegraph, Indian Daily News, Rossendale Free Press, Sanitary Record, Town-on-Sea Times, Scarborough Post, Northern Daily Mail, Local Government Chronicle, Reading Mercury, City Press, Hertfordshire Mercury, Ancestry Advertiser, Weekly Budget, Montgomery County Times, Blyth News, Alfreton Journal, Local Government Journal, Surrey Advertiser, Australasian Gazette, Wine and Spirit Gazette, Le Courrier de la Presse (Paris), Burton Chronicle, Shrewsbury Chronicle, Ayre Advertiser, Madras Standard, Boston Independent, Crewe Guardian, &c., &c.*

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1900 which was completed with the issue of Dec. 29th, and the Title-page to the Volume, are given in this number of THE LANCET.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1900 will be ready shortly. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are now ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 8	One Year	£1 14 8
Six Months	0 16 4	Six Months	0 17 4
Three Months	0 8 2	Three Months	0 8 8

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, MR. CHARLES GOOD, THE LANCET Office, 423, Strand, London, W.C.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and agents are authorised to collect, and do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

Communications, Letters, &c., have been received from—

A.—Messrs. Armour and Co., Lond.; Dr. B. Addenbrooke, Kidderminster; A. M. L. R.

B.—Dr. T. R. Brown, Baltimore; Mr. W. R. Burke, Douglas, Cork; Mr. H. Butterfield, Northampton; Dr. H. D. Bishop, Guernsey; Mr. W. E. Barton, Staunton-on-Wye; Messrs. E. C. Berryman and Sons, Lond.; Messrs. W. H. Bailey and Son, Lond.; Mr. F. N. D. Brown, Worthing; Mr. J. E. Brooks, Colwyn Bay; Mr. D. T. Barry, Rock Ferry; Messrs. Benson and Co., Lond.; T. B. Browne, Ltd., Lond.; Bayer Co., Lond.; A. Bishop, Ltd., Lond.; Dr. W. Bower, Hendon.

C.—Mr. W. F. Clay, Edinburgh; Mr. E. A. Charlesworth, Hanley; Mr. H. Cripps, Lond.; Mr. L. Culleton, Lond.; Cantab, Lond.; Mr. A. J. Campbell, Hastings; Messrs. Crossley and Co., Lond.; Messrs. Condy and Mitchell, Lond.; C. B. R., Brighton; Messrs. T. Christy and Co., Lond.; Messrs. J. A. Carveth and Co., Toronto; Dr. J. S. Collier, Lond.; Messrs. J. and A. Churchill, Lond.; Cheltenham General Hospital, Hon. Secretary of; Messrs. E. Cook and Co., Lond.; Dr. H. G. Cooper, Altrincham; Messrs. Samson Clark and Co., Lond.

D.—Mr. A. R. F. Eversfield, Lond.; Messrs. Evans, Sons, and Co., Liverpool; The Rims, Iden.

F.—Mr. W. C. Finch, Salisbury; Mr. N. H. Forbes, Tunbridge Wells; Herr G. Fischer, Jena; Fischer's Medicin Buchhandlung, Berlin; Mr. A. Ford, Waterford; Mr. W. Finucane, Lond.; Mr. C. D. Fenn, Diss; Messrs. Ferris and Co., Bristol.

G.—Mr. J. Good, Stockport; Messrs. Grierson and Co., Lond.; Galen Manufacturing Co., Lond.; General Apothecaries' Co., Lond.; Gloucester County Asylum, Superintendent of; General Hospital, Nottingham, Hon. Secretary of; Dr. J. Gledhill, Lond.

H.—Mrs. Hoddinott, Evesham; Staff-Surgeon W. R. Home, R.N., Edinburgh; Mr. T. M. Hocken, Dunedin, New Zealand; *The Hospital*, Lond.; H. W. B.; Dr. W. A. Hollis, Hove; Mr. John Hughes, Lond.; Dr. J. B. Hunter, Paisley; Hull Royal Infirmary, Secretary of; Dr. J. E. Hughes, Llanllar.

I.—Institut Imperial de Médecine Expérimentale, St. Petersburg, Librarian of.

J.—Mr. G. H. Johnston, Ticehurst; Mr. H. O. Jones, Amlwch; Dr. M. M. Jabara Judeidah, Merge Ayoun, Syria; Surgeon-Major M. Johnson, Lancaster; Dr. J. Johnston, Bolton; J. L.; Mr. J. F. Jordan, Birmingham; J. P.; Surgeon-Major J. Arnallt Jones, A.M.R., Lond.

K.—Dr. R. C. H. Kennedy, Ryde; Dr. C. F. Knight, Portobello; Dr. J. M. Munro Kerr, Glasgow; Dr. J. A. Knight, Georgia; Mr. R. C. B. Kerin, Lond.

L.—Mr. H. K. Lewis, Lond.; *L'Independance Médicale*, Paris; Liverpool School of Tropical Medicine, Hon. Secretary of; Messrs. Sampson Low, Marston, and Co., Lond.; Liverpool Stanley Hospital, Hon. Secretary of; Liverpool Medical Institute, Hon. Secretary of; Dr. A. H. Lewers, Lond.; London Throat Hospital, Hon. Secretary of; Messrs. J. Lyons and Co., Lond.

M.—Mr. J. A. Maraden, Lightcliffe; Messrs. Macmillan and Co., Lond.; Mr. E. Merck, Lond.; W. S. Merrell Chemical Co., Lond.; Dr. J. McCaw, Belfast; Messrs. C. Mitchell and Co., Lond.; Mahlkantha (Sadra) India Civil Hospital, Assistant House Surgeon of; Medicus, Leeds; Mr. J. C. McWalter, Dublin; Morison's Advertising Agency, Hull; Messrs. Manlove, Alliott, and Co., Nottingham; Manchester Royal Infirmary, Secretary of; Mr. J. M. Mangan, Ennis; Messrs. J. Murdoch and Co., Lond.; Dr. C. K. Millard, Burton-on-Trent; Mr. H. Melton, Penzance.

N.—Mr. Chisholm Nourse, Lond.; National Provident Institution, Lond.; Nottingham General Hospital, Assistant Secretary of; Dr. A. G. Naylor, Gloucester; Mr. F. C. Needes, Lond.; Mr. H. Needes, Lond.

O.—Mr. B. F. Ogle, St. Louis, U.S.A.; Mr. H. Owen, Lond.

P.—Dr. A. Packman, Stroud; Messrs. C. Pool and Co., Lond.; Messrs. Poulton and Noel, Lond.; Mr. Herbert J. Paterson, Lond.; Proprietress, St. Leonards.

R.—Dr. D. J. Roberts, Llanllyfni; Dr. C. H. Roberts, Lond.; Royal Hospital for Incurables, Dublin, Secretary of; Dr. N. Raw, Liverpool; Mr. R. Redpath, Newcastle-on-Tyne; Royal Academy of Arts, Secretary of; Mrs. Rabling, Cornwall; Mr. H. M. Roberts, Burnley; Hon. Sir D. P. Ross, Georgetown, British Guiana; Dr. Arthur Ransome, Bournemouth; Mr. A. R. Rendle, Stoke.

S.—Mr. Cloete Smith, Ingatestone; Sir J. Sawyer, Birmingham; Mr. C. H. Sers, Lond.; Schoiastic, Clerical, &c., Association, Lond.; Dr. Arbour Stephens, Swansea; Messrs. Savory and Moore, Lond.; Southern Medical Club, Glasgow, Hon. Secretary of; Mr. F. W. Sears, Lond.; Sanitas Co., Lond.; Dr. A. H. Sutherland, Lond.; St. Andrew's Hospital, Northampton; Société Belge de Chirurgie, Brussels, Librarian of; Stanley Elliott Advertising Agency, Lond.; Messrs. Smith, Rider, and Co., Lond.; Smith's Advertising Agency, Lond.; Sheffield Royal Hospital, Secretary of.

T.—Dr. Bell Taylor, Nottingham; Mr. W. Thomson, Manchester; Taunton and Somerset Hospital, Taunton, Accountant of; T. J. C.; Tuberculosis, British Congress on, Lond., Hon. Secretary-General of; Dr. W. Thorp, Limerick.

V.—Mr. J. W. Vickers, Lond.; Dr. H. J. Van Praagh, Lond.

W.—Rev. J. Wardale, Cambridge; Mr. Arthur E. Watson, Torquay; Dr. T. Jason Wood, Bradford; Wyleys, Ltd., Coventry; Messrs. J. Wright and Co., Bristol; Wall Paper Cleaning Syndicate, Lond.; Wigan and District Medical Guild, Hon. Secretary of; Captain F. N. Windsor, I.M.S., Netley; Mr. E. Wilding, Lond.

Letters, each with enclosure, are also acknowledged from—

A.—Dr. D. A. Alexander, Leek; Messrs. Allen and Hanburys, Lond.; A. B., Brockenhurst; Apollinaris Co., Lond.; A. R. M.; Mons. J. Astier, Asnières, France; Dr. A. Anderson, Wadsley; A. G.; Mr. D. E. Ankleseria, Ahmedabad, India; A. B. C.; A. P.; A. W. C.; A. H. B. A.

B.—Mr. D. Beatson, Dover; Dr. D. H. Baria, Dhrangadra, India; Bradford Union, Clerk of; Bradford Corporation, Treasurer of; Dr. F. H. Bertou-Brown, Rome; Borough Asylum, Portsmouth, Clerk of; Mrs. B., Lond.; Birkenhead Borough Hospital, Secretary of; Mr. G. T. Bates, Sutton; Mr. H. J. T. Blanch, Llandenny; Messrs. Barclay and Sons, Lond.; C. Birchall, Ltd., Liverpool; Messrs. F. B. Benger and Co., Manchester; Dr. S. H. Belfrage, Lond.; Mr. W. Bryce, Edinburgh; Dr. H. Bishop, Llanharran; Mr. T. R. Bryers, Sunderland; Mr. J. B. Bate, Isleworth; Dr. J. C. Boyd, Lifford, Ireland.

C.—Dr. E. Coleman, Martin; Mr. J. G. Chapman, Birkenhead; City of Newcastle-on-Tyne, Treasurer of; C. B. R.; C. W. H.; Dr. T. F. Chavasse, Birmingham; Dr. W. Craik, Thurnscoe; Croydon General Hospital, Secretary of; Mr. R. W. Coote, Beyton; Mr. J. B. Cameron, Lond.; Mr. J. W. Cundall, Lond.; C. B. M.; Signor G. Castoldi, Brescia; Mr. R. H. Cardwell, Lond.; Mr. D. Crombleholme, New Brompton; C. P.

D.—Mr. T. E. Dobbs, Castlecomer; D. W. P.; Dr. F. Dreaper, Newhall; Mr. G. W. Dawson, Lond.; Mr. W. W. Davies, Bristol; Mr. G. Dussol, Lond.; Messrs. Davy, Hill, and Son, Lond.; Dispenser, Stoke Newington.

E.—E. A. B.; E. B. W.

F.—Dr. D. A. Fraser, Montrose; Dr. D. Fergusson, Winchester; Mr. L. Franklin, Thaxted; F. W.; Messrs. F. Festersen et Cie, Bâle; Mrs. Freeman, Lond.; Fisherton House Asylum, Salisbury, Medical Superintendent of; Dr. J. C. Fisher, Lytham.

G.—Dr. F. W. Goodbody, Lond.; Mr. J. Griffiths, Cambridge; Dr. R. A. L. Graham, Belfast; G., Faversham; Mr. J. Graham, Newcastle-on-Tyne; G. A. B.

H.—Mr. W. Herbert, Kemble; Messrs. Hooper and Co., Lond.; Mr. A. Hawkyard, Hunslet; Haydock Lodge, Newton-le-Willows, Secretary of; Dr. J. Hawkes, Shanklin; H. E. T.; Mr. C. Holding, Southsea; H. H. I.; Holloway Sanatorium, Virginia Water, Clerk of; Messrs. C. J. Hewlett and Son, Lond.; Dr. W. J. Holme, Bacup; Dr. D. M. Hutton, Southport; Major F. C. Hawkins, I.M.S., Bombay; Hospital for Diseases of the Throat, Lond., Secretary of; Dr. C. Holman, Lond.; Dr. W. M. Harman, Winchester; Dr. W. T. Harkness, Hetton; Mr. W. A. Higgs, Castle Combe; Mr. R. T. Hemsted, Kintbury; Messrs. W. D. and C. S. Hamilton, Columbus, U.S.A.

I.—Dr. W. A. Illingworth, Bellingham.

J.—Mr. T. Johnston, Woodsetton; J. K., Wrecclesham; J. M. B.; Mrs. Johnston, Kingswood; J. M.; J. J. M.; J. W. G.; J. H. C.

K.—Dr. S. Keith, Lond.; Dr. J. P. Kitson, Cleobury Mortimer; Dr. L. Kidd, Enniskillen; Kent and Canterbury Hospital, Secretary of.

L.—Dr. R. R. Laslett, Lond.; Lightburn Hospital, Glasgow, Treasurer of; Leeds Public Dispensary, Secretary of; L. N. H.; Miss Z. Longstaff, Lond.; L. H.; Mr. C. B. Lockwood, Lond.; Mrs. Lappin, Gilford, Ireland; Messrs. T. Lewin and Co., Lond. Mr. L. Lewis, Neath.

M.—Miss Martin, Manchester; Mr. M. Moynihan, Whitby; Mr. R. J. Mayne, Belfast; Dr. L. J. Minter, Uxbridge; Dr. S. R. Macphail, Rowditch; Dr. W. J. McCardie, Birmingham; Medical Officers' Library, Aldershot, Librarian of; Messrs. B. MacGeorge and Co., Lond.; Mr. J. Murray, Lond.; Mr. McGee, Dublin; M.D., Barnsley; Manchester Medical Agency; M. O. H.; M.R.C.S., Sunderland; Medicus, Lond.

N.—Dr. C. R. Niven, Liverpool; Mr. J. B. Neal, Lond.; Newcastle-on-Tyne City Lunatic Asylum, Clerk of.

O.—Dr. J. O'Conor, Buenos Ayres; Dr. C. M. Ormerod, Liphook; Dr. J. W. Ogle, Lond.

P.—P., Lond.; P. S. W.; P. J. F.; Messrs. Parke, Davis, and Co., Lond.

R.—Dr. C. Reinhardt, Ipsden; Dr. R. M. Ralph, Wakefield; R. J. F.; R. M. H. W.; Royal Alexandra Hospital for Children, Brighton, Secretary of; Dr. S. Rideal, Lond.; R., Gosport; Messrs. Robertson and Scott, Edinburgh; Dr. E. D. Rowland, New Amsterdam, British Guiana.

S.—Dr. P. B. Smith, San Remo; Mr. R. A. Shannon, Orpington; Dr. J. A. Shaw-Mackenzie, Lond.; Mr. A. B. Sturges, Leicester; Mr. Stenaly, Manchester; Surgeon, Southwold; Senhor J. J. M. da Silva, Oporto; Mr. F. J. O. Stephenson, Felsted; Mr. R. Noble Smith, Lond.; Mr. H. R. Shepherd, Castleton; Dr. F. H. Sinclair, Rostrevor; Dr. G. H. Sowry, Newcastle; Mr. C. L. B. Stares, Lond.; Dr. S. Simpson, Great Haywood; Professor T. Schott, Frankfort; Messrs. Sharland and Co., Lond.; Dr. H. Sieveking, Hamburg.

T.—Dr. H. P. Taylor, Midyell; Mr. H. E. Taaffe, Londonderry; Dr. R. F. Trevelyan, Leeds; Mr. W. R. Tarbet, Ledbury; Mr. P. T. Tugwell, Brighton; Mr. P. Tatchell, Lond.; Mr. D. C. P. Taylor, New Headington; Mr. J. Thin, Edinburgh.

V.—Senhor F. Vas, Porto.

W.—Mr. H. W. Wise, Poynton; Dr. J. R. Woodcock, Holcombe; Mr. M. W. Williams, Llantwitfardre; Wesleyan Mission House, Lond., Treasurer of; Mr. R. G. W. Wilson, Newcastle-on-Tyne; W. C. R.; Miss W., Harrogate; Mr. R. R. Williams, Carmarthen; Dr. T. Whitelaw, Portobello; W. F. B.; Mr. J. Ward, Lond.; Dr. V. Wanostrocht, Fenny-compton; West Riding County Council, Solicitor of; Messrs. H. Wilson and Son, Lond.; Mr. W. Webster, King's Lynn; Dr. F. G. Wallace, Lond.

Y.—Dr. E. S. Yonge, Manchester.

EVERY FRIDAY.

THE LANCET.

PRICE SEVENPENCE.

SUBSCRIPTION, POST FREE.

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 0	One Year	£1 14 8
Six Months	0 16 3	Six Months	0 17 4
Three Months	0 8 1	Three Months	0 8 8

Subscriptions (which may commence at any time) are payable in advance.

ADVERTISING.

Books and Publications ...	Seven Lines and under	£0	8	0
Official and General Announcements	Ditto	0	0	0
Trade and Miscellaneous Advertisements	Ditto	0	4	6
	Every additional Line	0	0	6

Quarter Page, £1 10s. Half a Page, £2 15s. An Entire Page, £5 5s.

Terms for Position Pages and Serial Insertions on application.

Agent for the Advertisement Department in France,—J. ASTIER, 9, Rue Traversière, Asnières, Paris.